Paper

AUG. 24, 1951

WHAT ABOUT THE SWEDISH PULP SITUATION? . . . See page 11

WHAT WILL YOU DO ABOUT THE FEDERAL TAX PROGRAM? . . . See page 14

HOW CAN YOU PROLONG THE LIFE OF YOUR WATER REMOVAL EQUIPMENT? . . . See page 26

WOOD PULP

G

Established 1886

"America marches forward . . . lifting civilization to new levels and new achievements. That is what makes us Americans."

WOODROW WILSON

The American people and American industry are again fulfilling an historic mission and performing a world service . . . And the Pulp and Paper Industry continues to play a vital role in the "new levels and new achievements" that mean so much both to freedom and free enterprise.

GOTTESMAN & COMPANY

— INCORPORATED —

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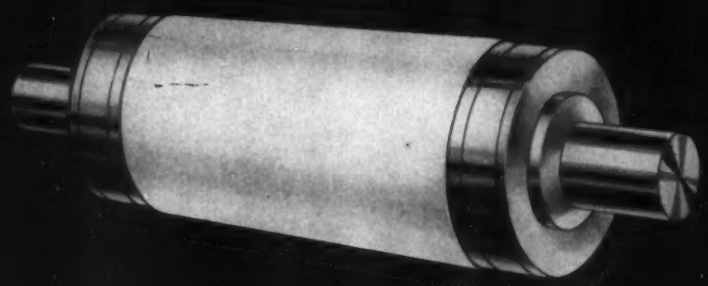
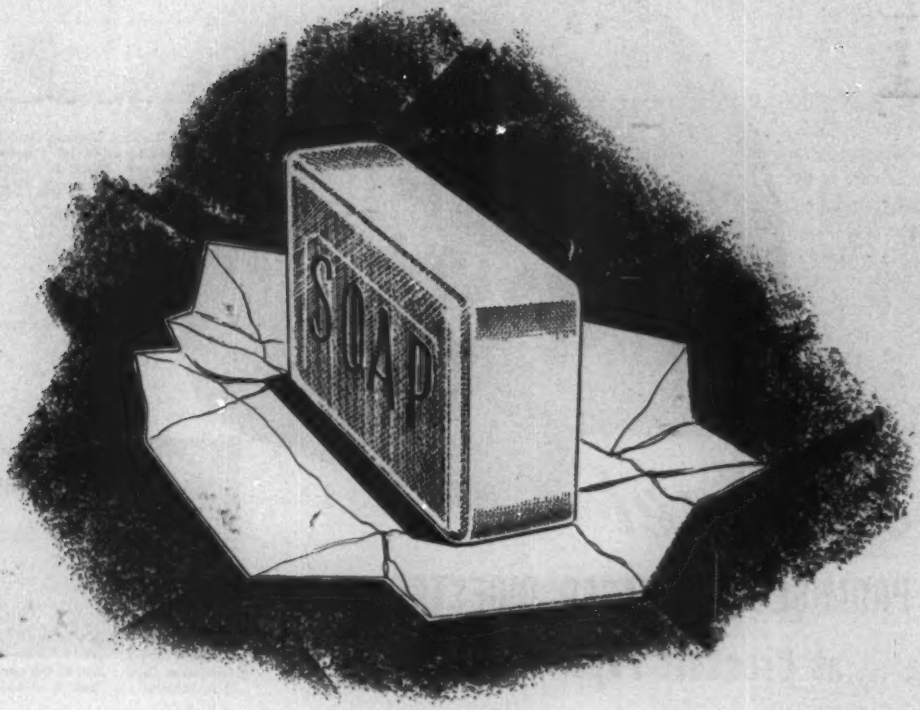
EUROPEAN OFFICES: Birger Jarlsgatan 8, Stockholm, Sweden

"HOLYOKE"
CALENDER ROLLS



HOLYOKE MACHINE COMPANY

CALENDER ROLLS for the PAPER and TEXTILE INDUSTRIES
WATER FILTRATION EQUIPMENT
HOLYOKE, MASSACHUSETTS



Something You can sell

If you have a customer or prospect who has trouble with mold on soap wrappers, you can sell him a covering that *won't mold*. How? Simply by offering a casein-coated wrapper protected by Monsanto Santobrite.

This built-in protection is inexpensive. As little as 2.0% of properly applied Santobrite (sodium pentachlorophenate, technical), based on the dry weight of casein, *protects* against surface microbiological growth . . . in any climate. Santobrite also should be added to the paste employed to seal wrappers, because mold organisms also flourish in adhesives.

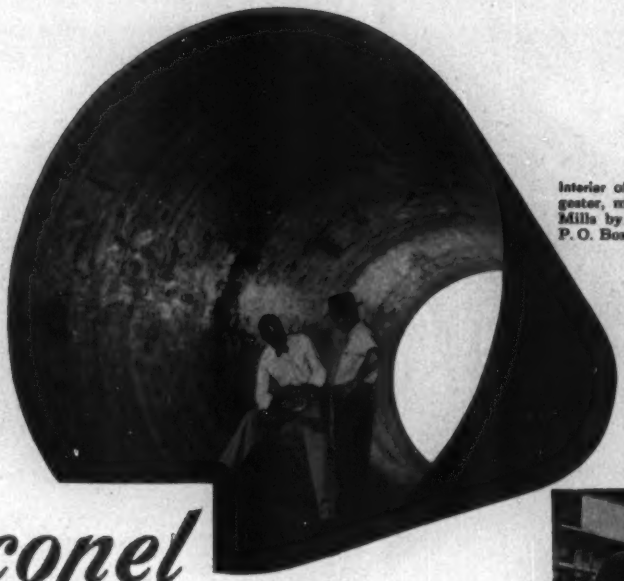
Why not offer your customers soap wrappers protected against mold? For information on the use of Santobrite for this purpose, contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 S. Second Street, St. Louis 4, Missouri.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto (Canada) Ltd., Montreal.

Santobrite: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS for PLASTICS

SERVING INDUSTRY . . . WHICH SERVES MANKIND



Interior of Lukens Inconel-Clad Steel digester, manufactured for Crossett Paper Mills by Wyatt Metal & Boiler Works, P. O. Box 3052, Houston 1, Texas.

Inconel

PROMISES INCREASED DIGESTER LIFE

. . . at Crossett Paper Mills

Completed digester tied to flat car on which it travelled from Texas to Arkansas.

There was trouble at Crossett Paper Mills in Crossett, Arkansas.

For some unexplained reason, corrosion caused their mild steel digesters to fail after as little as four years. Previously digesters had lasted as long as twenty years.

After testing several materials, Crossett turned to Inconel. Corrosion tests with this alloy had proved it is highly resistant to both corrosion and stress corrosion cracking in both white sulphate cooking liquor or mixtures of white and black liquors.

What's more, Inconel's coefficient of expansion is similar to that of steel. This is a big advantage where short cooking cycles cause frequent expansion and contraction of the digester.

Right now, it is a little early to make any long-range estimates on how long Inconel will last. But, every indication points to the fact that Inconel is a solution to the problem of digester corrosion.

Test Results: Here is how Inconel and steel compare in corrosion resistance under actual operating conditions.

CORROSION TEST IN SULFATE COOKING LIQUOR	
Temperature	300° F. avg.
Liquor Velocity	4 ft./sec.
Duration of Test	35 days

Material	Corrosion Rate	
	mdd.	ipy
Inconel	1.8	0.0003
Mild Steel	420	.077

3 TYPES OF INCONEL INSTALLATION

1. New digesters fabricated from Lukens Inconel-Clad Steel.
2. Plant-installed lining of Inconel sheet or strip for existing digesters.
3. New Inconel-lined digesters.

A new booklet, "Corrosion and Field Lining of Sulphate Digesters," contains data on the corrosion of metals and alloys in sulphate digesters as well as methods of fabrication. Write for your free copy today.

Right now, much of Inconel's production is being diverted to defense. But, if you have a special problem in metal selection or corrosion, write Inco's Corrosion Engineering Section.

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street, New York 5, N. Y.

Inconel... FOR LONGER LIFE

Paper TRADE JOURNAL

VOL. 133 AUGUST 24, 1951 No. 8

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NEXT WEEK

Hounded for Production? Bothered by Maintenance? General Electric has a plan for everyone to get the "Mostest" out of both.

Got a Steam or Power Problem? And who hasn't? Dan Helmick has some ideas that may help.

REMEMBER THESE DATES

SEPT. 6-8: American Pulp & Paper Mill Superintendents Assn., New York, Canadian Division, meeting at Saranac Inn, Saranac, N. Y.

SEPT. 14-15: American Pulp & Paper Mill Superintendents Assn., Northeastern Division, meeting at Poland Spring House, Poland Spring, Maine.

SEPT. 14-15: American Pulp & Paper Mill Superintendents Assn., Northwestern Division meeting at Northern Holiday Resort, Marenesco, Mich.

SEPT. 16-19: American Institute of Chemical Engineers, Regional Meeting, Sheraton Hotel, Rochester, N. Y.

SEPT. 20: American Pulp & Paper Mill Superintendents Assn., Michigan Division, Fall Meeting at Hotel Harris, Kalamazoo, Mich.

SEPT. 26-28: Alkaline Pulping Conference of the Technical Assn. of the Pulp and Paper Industry at the John Marshall Hotel, Richmond, Va.

OCT. 10-12: American Pulp & Paper Mill Superintendents Assn., Southern and Southeastern Div'n., George Washington Hotel, Jacksonville, Fla.

OCT. 15-18: 6th Engineering Conference, Technical Assn. of Pulp and Paper Industry, General Oglethorpe Hotel, Wilmington Island, Savannah, Ga.

OCT. 29-31: National Foreign Trade Convention, Waldorf Astoria, New York City.

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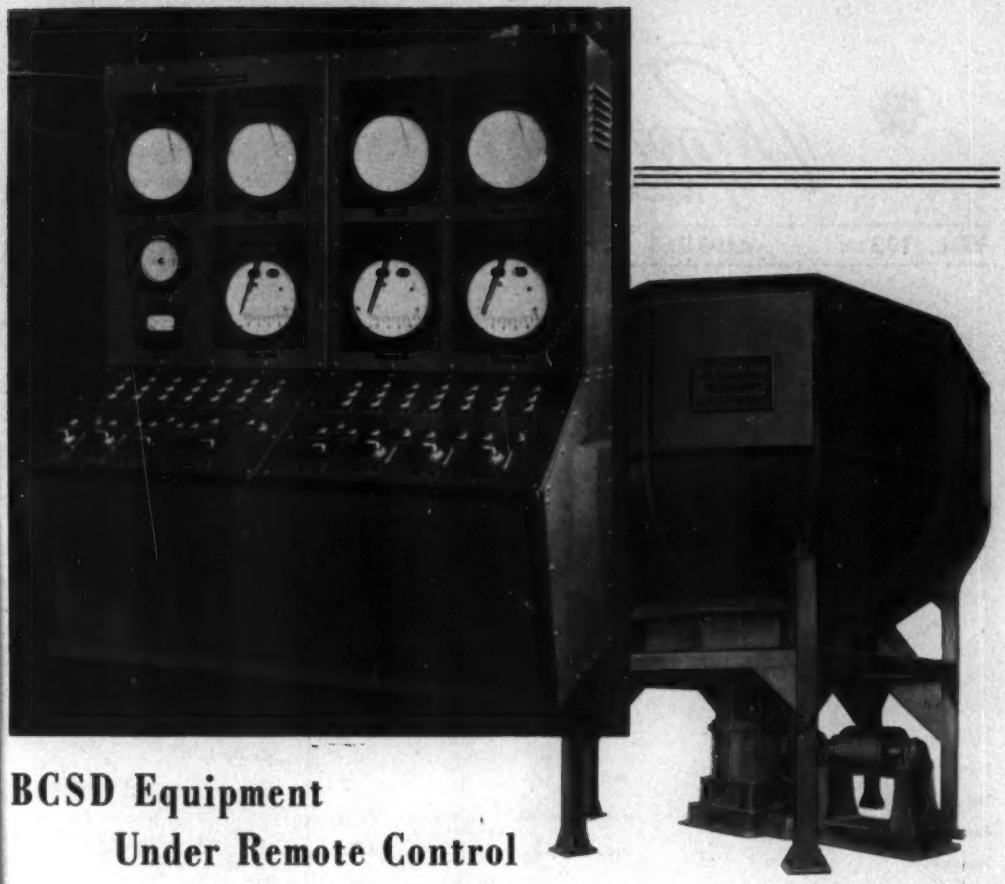

BCSD Equipment Under Remote Control

Typical of the emphasis placed on remote control of both individual equipment and entire systems at B-C-S-D is the above panel board.

Here is a board that controls a de-inking system recently installed in a midwest mill.

In other mills pulping, stock cleaning, valve operation and many other operations are also remotely controlled from Shartle boards.

Even the plug settings of HYDRAFINERS and Miami jordans are remotely controlled—via Duotrol.

To carry the theme still farther, today's Black-Clawson paper machine designs particularly emphasize remote control of operations all the way from vats or Fourdrinier on thru to finishing.

If it is a B-C-S-D machine or combination of machines it will, if at all possible, be panel board operated.

SHARTLE BROTHERS MACHINE COMPANY, MIDDLETOWN, OHIO

DILTS MACHINE WORKS, Fulton, New York • *Divisions of* THE BLACK-CLAWSON CO., Hamilton, Ohio
Western Sales Office: Mayer Bldg., Portland, Oregon • *Southern Sales Office:* 937 Coventry Road, Decatur, Georgia
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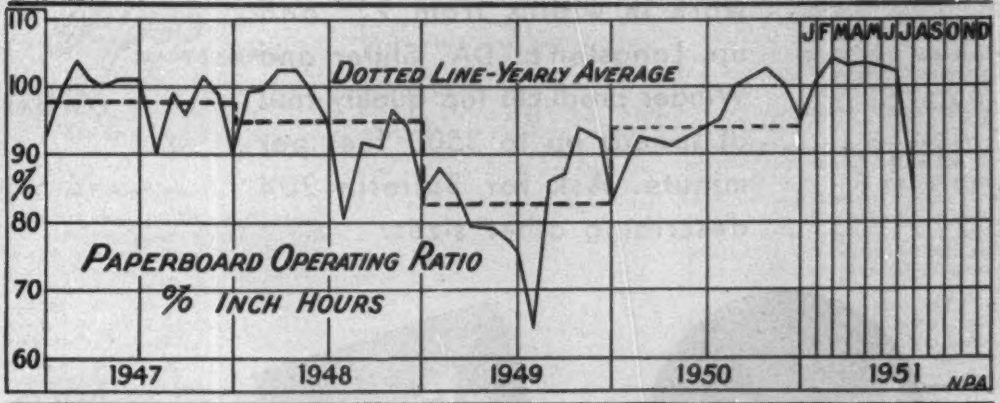
OUR BUSINESS

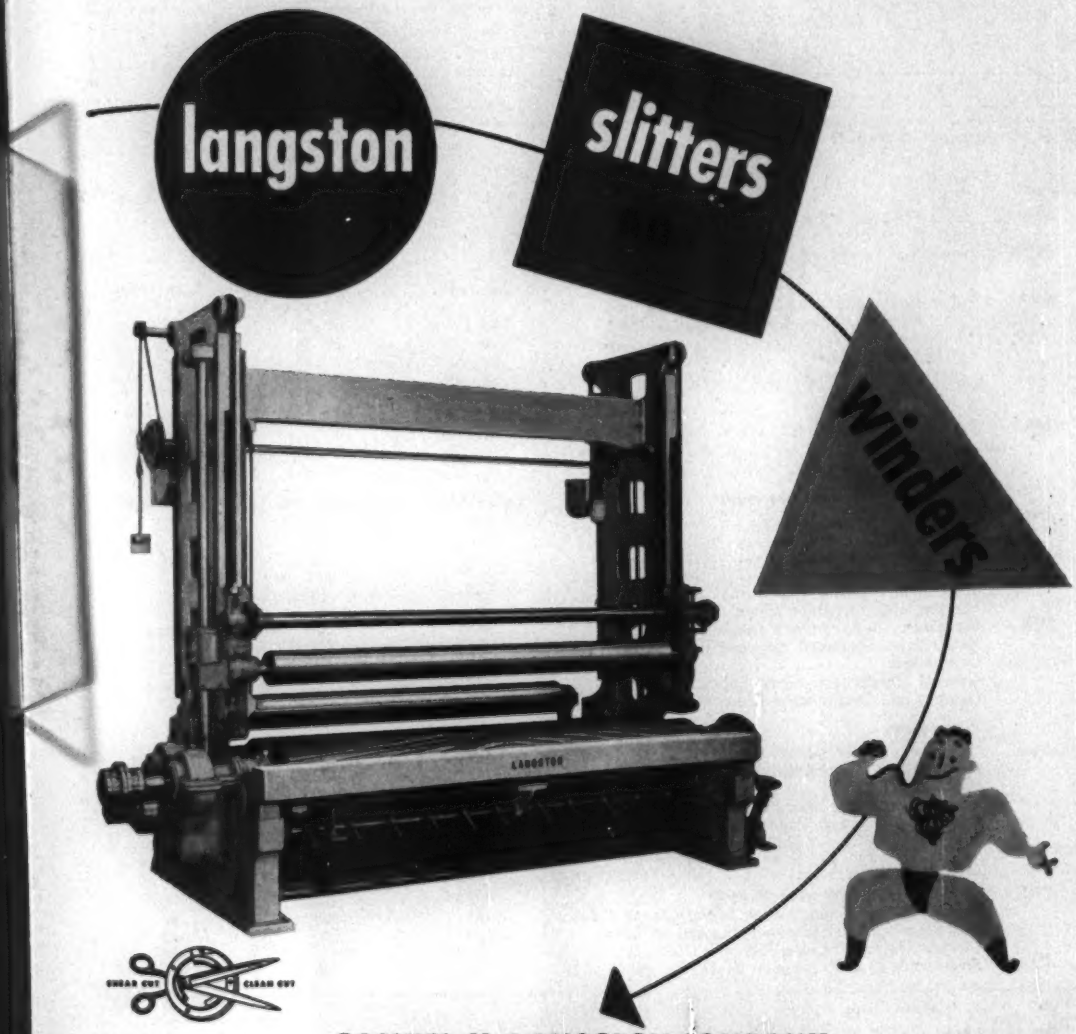


Brief of Important Figures

Source	Production	WEEK ENDING Aug. 11, '51	July 14, '51	Aug. 12, '50
APPA	Paper Production Percent Capacity[a]	101.0	94.6	98.5
	Unbl. Kraft Paper Production Percent	93.2	91.1	97.0
NPA	Paperboard Operating Ratio Percent Inch Hours	94	83	99
		June 1951	**May 1951x**	**June 1950**
APPA	Paper Production[e] (Except Newsprint and Building Papers) ...Tons	859,000	909,757	788,500
	New Orders ...Tons	861,000	887,883	812,800
	Unfilled Orders ...Tons	995,000	997,925	565,565
	Shipments ...Tons	861,000	902,729	786,300
		July 1951	**June 1951**	**July 1950**
NPA	Paperboard Production ...Tons	815,547	977,214	745,255
	New Orders ...Tons	814,729	873,807	890,890
	Unfilled Orders ...Tons	537,591	547,963	524,391
	Our Customers Activities Index[1]	**Latest Mo.[c]**	**Previous Mo.[c]**	**Year Ago[c]**
FRS	Manufactures Total Index	233	232	203
	Durable Mfg. Index	278	278	232
	Nondurable Mfg. Index	196	195	180
	Chemical Products Index	297	297	255
	Mfg. Food Products Index	159	153	157
	Printing and Publishing Index	181	188	169
ODC	Magazine Advg.-Printer's Ink Index	355	338	324
	Retail Sales Combined Adjusted Index	347.6	343.3	315.0
	Drug Index	229.8	231.4	215.9
	General Merchandise Group Index	334.0	326.8	306.6
	Grocery and Combination Index	442.5	437.7	379.1
	Prices Index			
BLS	Consumers Price Index[1]	185.4	184.6	169.3
	Wholesale all Commodities[2]	182.8	183.5	155.9
	Wholesale Foods[2]	187.2	185.7	159.9
	Commodities other than Farm Products and Foods[2]	171.5	172.4	147.6
	Wholesale Pulp and Paper[2]	196.2	196.2	155.4
	Purchasing Power of Dollar, Consumers Prices[1]	53.9	54.2	59.1
	General Activity Index			
FRS	Mfg. Production-Worker Payroll	429.4	433.3	348.0
	Unemployment Compensation Initial Claims (M)	908	983	1,367
	Miscellaneous Carloadings–Thousands of Cars	1,582	1,580	1,423
	Electric Output (Million KW hr.)	35,136	34,431	31,486
PTJ	Average 32 P & P Common Stocks as of Aug. 18	$39.32	$38.44	$31.80

[1] 1935-39=100 Unadjusted Index
[2] 1926=100
[c] New 6-7 day basis.
[e] For Five Weeks.
[x] For details see APPA Monthly Statistical Summary—June 1951 Estimated Figures
[z] Latest Month Available on Request
Revised figures.

Designed for very heavy duty work in widths from 92" and up, Langston's "DA" Slitter and Winder produces top quality rolls at speeds up to 3500 feet per minute. Ask for Bulletin 204 describing other sizes.



SAMUEL M. LANGSTON COMPANY
CAMDEN, N.J.

Paper TRADE JOURNAL

TRENDS

Office of the PAPER TRADE JOURNAL,
Wednesday, August 22, 1951.

Usual Fall Pickup Seen

The consensus of New York representative fine paper houses is that barring a Korean peace — which now looks dim — demand is going to get the usual Fall spur; that consumers will buy for current demand at a steady rate and leave their heavy inventories as is until the Defense program is satisfied and international conditions mend.

In general, this is the pattern of thinking in all segments of the industry, and mills and suppliers are planning accordingly.

Exceptions come from those who see Fall orders for packaging papers and boards deferred until the trend of general business is clearer; those who feel the pickup will be a shot in the arm followed by a deepening slump; and from those who fear no marked improvement in demand will come until conditions are more "normalized," particularly with regard to inventories and prices.

Wanted is a good crystal ball!

Cottons Market Dull

More than summer quiet is seen in the dull trading in cotton cuttings. Mill resistance to OPS ceiling prices is becoming marked, and reports come in of sales well below the range. A return to *normalcy* has started, trade sources believe, after the fantastic prices and supply conditions which followed "Korea."

Paper mill buying is being restricted also by the relative size of high-priced cotton inventories to current production—which in most cases has been cut back to a softened demand for higher volume rag papers. Other mills that could take in more cuttings are studying the size and price of the new cotton crop, availability and price of cotton linters, and see a general dip in cuttings from OPS ceiling prices, CPR 28.

Dealers who believe price cuts announced recently by a large consumer were too drastic do see *normal* conditions of supply and demand developing and price easing. Pressure of demand is gone, it is said, also black market prices.

QMD August 7 Awards

Philadelphia QMD awards on its August 7 offering showed an easing from ceiling prices on unbleached cotton, mixed khaki, and herringbone twill. White cuttings, blue denim, fancy shirts and suntans brought ceiling prices. At another sale scheduled for this month, it is expected that prices will be lower — in view of restrained mill buying. Graders continue to resist price cuts, however, because of short supplies of cuttings.

Naval Depot Cuttings Exempted

Sales of new cuttings at the Naval Clothing Depot, Brooklyn, are officially exempted from ceiling prices, as named in CPR 28, it has been announced. By the price order for cotton cuttings, sales by Government depots are subject to a ceiling price of 0.50c per pound below the official ceiling for comparable cuttings delivered to mills. GOR 8 to CPR 28, however, exempts sales of unsorted cuttings from ceiling prices. The Brooklyn Depot claims its cuttings are unsorted, and was upheld in its interpretation by higher authority.

Rags and Bagging Weak

Further weakening in roofing rags is reported in all markets. No. 2 grade was dropped $5 during the week to $35 a ton to mills. Lower prices also were named to move the stock, but buyers are out of the market and material abundant.

There is little or no buying interest in the old bagging market, and prices continue to sag. Southern cotton men are reported to be buying locally at better prices than those offered in the north. Little improvement is anticipated.

Cotton Imports

Notable in cottons is an easing in foreign supply and price. Cotton waste is becoming available to domestic mills in Europe, the United Kingdom, etc., which have been drawing so heavily on the meagre supplies for the manufacture of shoddies, plastics, and sundry. Thus papermaking rags are becoming more available with less pressure pricewise. Importers see the reappearance of foreign cuttings into this market by the Fall at competitive prices.

World Trade Prospects

Trade Pacts Reviews*

Under GATT, the U. S. has trade agreements with the following countries: Australia, Belgium, Brazil, Burma, Canada, Ceylon, Chile, Cuba, Czechslovakia, Denmark, Dominican Republic, Finland, France, Greece, Haiti, India, Indonesia, Italy, Liberia, Luxembourg, Netherlands, New Zealand, Nicaragua, Norway, Pakistan, Southern Rhodesia, Sweden, Union of South Africa, and the United Kingdom.

Separate bilateral trade agreements also exist between the U. S. and 10 other countries, excluding the Philippines: Argentina, Ecuador, El Salvador, Guatemala, Honduras, Iceland, Iran, Paraguay, Switzerland, Venezuela.

Bilateral trade pacts with Peru, Turkey and Uruguay remain in effect until the three formally become members of GATT, when the pacts will either be suspended or terminated.

Notice of intention to renegotiate bilateral agreements with Venezuela is on the State Department's schedule, following its recently announced acceptance of a request from Venezuela for revisions.

Czechoslovakia was not included in the State Department's recent ban on tariff benefits to U. S. imports from the Soviet and dominated areas. Involved in the exception is the most-favored nation provisions and individual U. S. concessions which requires consultations with GATT member countries.

West Germany will join GATT as a full member about October 1. Austria plans to sign the Protocol sometime in September. Finland and the U. S. did not negotiate any new tariffs at the Torquay conference, but Finland did modify duty concessions granted to the U. S. at the previous conference at Annecy, France, in 1949.

* ATL Topics, The American Tariff League, N. Y.

Trade Briefs

The Swedish Ministry of Finance has set up a committee to study over a period of 1½ to 2 years the possibilities of maintaining a constant value of the krona under conditions of full employment, according to the *Svenska Dagbladet*. Due for consideration are the reasons for aiming at a constant value and the international factors which influence Swedish prices. The possibilities of neutralizing or slowing down the effects of these foreign factors through foreign exchange policy, monetary policy and price subsidies, also will be studied.

• • Reports that Sweden might revalue its currency upward to help stem its domestic inflation are seen as unfounded by Swedish banking circles. Swedish gold and foreign exchange reserves are far too small to meet the consequences of isolated revaluation of the Swedish krona, said *Svenska Handelbanken* in its monthly economic review.

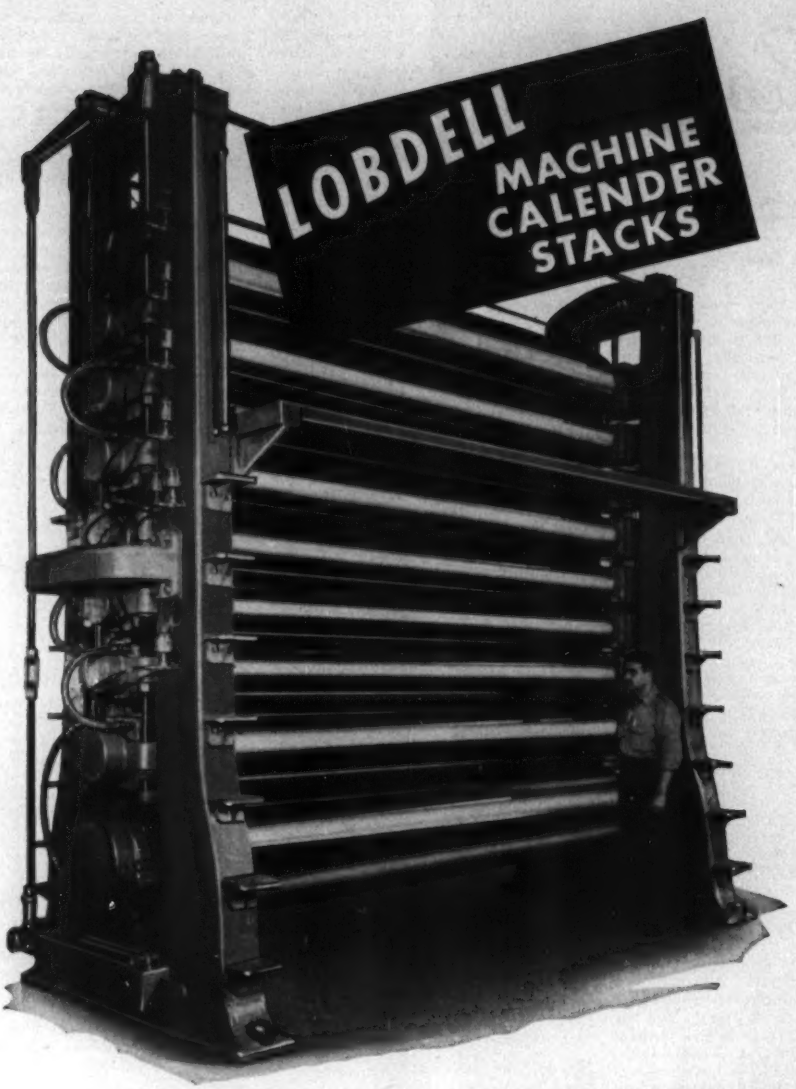
• • Though the Australian Prime Minister recently stated that "the best and most economic advice is against any alteration in the exchange rate, the large balance of payments continues to give rise to rumors of a possible appreciation."

— E. P. N.

Paperboard Production (Tons)*

	Aug. 11 1951	Aug. 4 1951	Aug. 12 1950
Production	223,293	223,232	224,414
New Orders	166,587	354,939	237,995
Unfilled Orders	607,643	664,707	646,656

* Source: NPA.



One of two Lobdell Stacks to be used on a vat-type Downingtown Board Mill of 122" capacity. The machine is designed to produce calendered paperboard of various types calipering from .016 to .070 with a #3 smooth, water finish. The stacks are water-cooled with closed-end bronze bearings and ratchet lift . . . the wet end stack has seven rolls and the dry end stack is equipped with nine rolls. Write for detailed information about these and other Lobdell Machine Calender Stacks.

LOBDELL UNITED COMPANY

1836 WILMINGTON 99, DELAWARE 1951

A SUBSIDIARY OF UNITED ENGINEERING AND FOUNDRY COMPANY

News of the Week

Pulp Smörgåsbord

Back from his annual visit to Sweden, James Donaldson, president of Stora Kopparberg Corp., in an exclusive interview with *Paper Trade Journal*, gave a somewhat startling report of the inflationary conditions prevailing in Sweden.

Bidding for extra needs of pulp wood by a number of producers in order to maintain full operations has forced the price of pulp wood to really dizzy heights. At the pulp wood auctions last November, the price for 1951 deliveries of pulp wood were established at around 45 kroner per cubic meter. Since then, prices have been bid up to as high as 75 kroner f.o.b. to 90 kroner per cubic meter delivered. Allowing 7 cubic meters per ton of pulp, this means that the cost for pulp wood is figuring as high as $125 per ton of pulp. In addition, the cost of coal, chemicals, labor and ocean freight have steadily advanced in price.

Another headache to the Swedish producers is the Government export tax on chemical pulp which is now 470 kroner per long ton or approximately $87 per short ton. While the pulp producers are supposed to have 70 percent of this tax returned to them some ten years from now, there is nothing certain that the agreement will not, one day, be abrogated and, therefore, the export tax is figured as part of cost. The so-called purpose of this tax was supposed to be anti-inflationary but, actually, it is inflationary in that selling prices are raised to include the amount of the tax.

Today, in Sweden, one hears on every side of the terrible shortage of labor. All industry is severely handicapped.

All kinds of building is under strict Government control. No one can make even a minor replacement without a permit.

Labor is being imported from several foreign countries which raises problems with the Unions and, as a result, foreign labor usually stays only a few months. Many laborers drift from one job to another disregarding the advantages that should be normal to steady employment. The shortage in labor is largely due to labor's unwillingness to work even to the full annual normal hours of work. No one is willing to work overtime no matter how much they are paid. This situation is due to the income tax laws which give no incentive to a worker creating additional income. In fact, if he creates more production and, in turn, more income, he is penalized by taxes to the point where he has less income.

For 1952 the outlook is even more serious in that the Government has passed a law which increases the vacation period for all workers to three weeks. This must result in curtailed production of manufactured products during 1952 and, in turn, bring about a shrinkage of national income. One easily sees how such Socialistic trends in other countries must, one day, bring down the roof over any country's economy but, at the same time, overlooks the fact that it not only can but is actually happening here in the United States.

As of June 30, inventories of woodpulp in the hands of Swedish producers reached an all-time low. Actually, there was to all practical purposes no pulp in stock or in warehouses.

The pulp and paper industry in Sweden would welcome an easing in demand with less pressure from buyers because, if the present trend continues, cost will rise further and the difficulties will be greater for all parties concerned when the eventual readjustment must be made in both cost and selling prices.

GAYLORD BUYS CUSTER PLANTS

Negotiations are in progress for Fairfield Paper & Container Co., with plants in Baltimore, Ohio and Beaver Falls, Pa., and The Dresden Paper Mills Co., Dresden, Ohio, to merge their interests with those of Gaylord Container Corp. The transaction, when completed, will add two paper mills and two container plants to the Gaylord operations. M. D. Custer is president and treasurer of the Ohio firms.

Just In Planning

The more than 1,200,000 working plans issued thus far in the building of the S.S. United States would form a pathway 30 inches wide and 510 miles in length. More than 8,400 drawings have been produced at Newport News by the Newport News Shipbuilding and Dry Dock Co. Two freight carloads of paper weighing 145,000 pounds have been used.

RECORD PULP PRODUCTION

Record production and supply of wood pulp in 1951 is promised by tonnages for the first six months, L. Turcotte, president of Puget Sound Pulp & Timber Co., finds in his mid-year survey of the national situation. Market supply has been bolstered by both increased imports and increased shipments from domestic mills. January-June tonnages substantially exceeded those for either the second half or the first half of 1950.

Pulp production of domestic mills totaled 8,293,000 tons in the first half of 1951, against 7,644,000 tons in the second half and 7,353,000 tons in the first half of 1950. Imports totaled 1,265,000 tons in this year's January-June period, compared with 1,140,000 tons in the July-December period, and 1,205,000 tons in the January-June period, of 1950. Export tonnage, less than one percent of total supply, was up to 93,000 tons in the first half of 1951, against 57,000 tons in the second half and 36,000 tons in the first half of 1950. Domestic new supply established a six-months record of 9,544,000 tons this year, vs. 8,727,000 tons in the second six months and 8,522,000 tons in the first six months of last year.

"Some slackening in demand for pulp consumed in peacetime channels would not be surprising," Mr. Turcotte observed, "but we may anticipate larger business generated by expanding defense production. A busy closing half-year is indicated for the American wood pulp industry."

NEW YORK TRYS NEW SYSTEM

Many New York city employers thought they were getting an extra bill for unemployment insurance on August 1, actually they were getting a notice of the insurance claims that were being paid to former unemployed employees, and charged to their account.

This new system is to allow employers to keep a closer check on payments and withdrawals to the fund. Employers are urged to rehire, where possible, former employees to lower withdrawals from their accounts. Favorable balances mean lower unemployment tax next year.

It is expected that the new check-up will help eliminate illegal payments of unemployment tax next year and will help eliminate illegal payments of unemployment claims.

Taxes-Legal Skyrocket

It's interesting and important to notice the number of people who are talking about TAXES. It's too soon to say everyone is talking about them, but you hear the boys at Engine 65, N.Y.D.D., Congressmen on both sides of the fence, men in the mills, the policemen—even those high placed in government—grumbling about it.

The other night, one of the firemen on 43rd Street was reading a notice about the rate increase on telephones, necessary because of higher income tax. It would be $1 per month, only $12 per year. Said he, "My wife owns some stock in the company. I am going to be charged $12 a year to pay a tax on my phone so that the $9 dividend can be maintained. We have only four shares, so actually we are only going to get $6 per share. It doesn't make sense to me. Hardly pays to be a stockholder."

How true! And how many times this is occurring across the country.

The Congress now has before it another tax increase. It is supposed to raise another $10 billion by raising our individual tax bill 12½ per cent, and that of our employers 5 per cent.

Who is it going to hit hardest? YOU AND ME! Sure we are told that we should "soak-the-rich." But that cannot solve the problem; there are too few of them. Only 4.4 percent of our families earn over $10,000 before taxes, and 2.7 percent afterward. These people are also a source of risk investment money, the money which builds new industry, expands old ones, and makes jobs.

Now, take our own industry: **it is famous for a conservative dividend** policy. How it earns profits, works out like this. It makes about 25 per cent before taxes; Uncle Sam, the silent stockholder takes about half, leaving some 12-13 per cent in the business. It pays out of profits, on the average, about 35 per cent of its earnings. The stockholder gets about 4-5 per cent of the sales dollar and it would work out to about the same percentage on his investment. Certainly not a high return for the risk that is always present, and especially so when it is remembered that the stockholder must also pay an additional income tax.

The balance, 7-8 per cent, is retained in the business to finance new mills, modernize old ones and pay wages, dividends and keep things running when times are slack.

Under the proposed new tax bill some 70 per cent of the earnings, (including excess profits), will be taken for federal expenses. With the same profit as before, the tax collector will take 17.5 per cent of earnings leaving only 7.5 per cent in the business. On the same basis the stockholder would get 2.6 percent return or less than he would get on *tax free bonds.*

Why should an investor take a risk in paper or other stocks, when municipal bonds, a first mortgage on the taxpayers, having no risk, return as much. On the other hand, the company might say: "We won't put anything back into the business." Exit new jobs, or payrolls, when the going gets tough.

What can be done about it? The obvious answer is quit spending so much money, money we cannot afford to spend.

We cannot cut out Defense. However, we can demand utmost efficiency in this spending.

We cannot cut out the interest on our national debt nor its repayment.

The only place left is in the civilian expenditures. And there is plenty of room there to cut. Everyone knows that is also the hardest place to cut, for each group affected thinks the cut should be made in the other fellow's project. It appears that the only way taxes can be cut is **to impose a ceiling on taxes for civilian use.** Sounds radical doesn't it. Don't fool yourself. Nearly every city, town and states has a limit above which they cannot tax. **The Federal Government should not be exempt.**

There are several such proposals before Congress, including a constitutional amendment. Each limits federal spending. One would limit federal expenditures to 25 per cent of national income. Another would limit civilian expenditure to 5 per cent of national income plus special taxes to pay the costs of war and interest and retirement of the national debt, **only upon the expressed vote of the American people.**

If you are satisfied as is, do nothing. If not, write your representatives in Congress. It's your money they are spending.

The English people didn't show any interest in government spending, and they soaked the rich. They're broke and Socialist to boot.

BUY RAISIN-THIEBAUT FIRM

Raisin - Thiebaut, Inc., one of the West's oldest makers of set-up paper boxes, has been purchased by R. P. Bemiss and W. E. Jason, president and vice-president, respectively, of Bemiss-Jason, a major supplier of corrugated paper specialties.

Appointment of Wilson J. Field as new general manager of the box firm, also located in San Francisco, was revealed by the new owners. Under Mr. Field, they stated, Raisin-Thiebaut will continue to operate with its present employes, making boxes for both special uses and general merchandise.

WASTE LIQUOR IMPROVES CROPS

PARK FALLS, Wis.—Examining successive years' crops on a farm field that was heavily fertilized three years ago with spent sulphite liquor indicates that this material may have substantial value in improving yields of some crops, according to William Rogan, agricultural agent of Price County. Mr. Rogan reports that the test field shows definite improvement in strips treated with this sulphite pulp mill by-product.

In the fall of 1948, a Price County farmer had the Flambeau Paper Mill spread spent sulphite liquor on some experimental strips in a stubble field. The company used the liquor at varying rates of application on these strips, ranging from 5 tons per acre to 35 tons per acre of the dry solids contained in the liquor.

After the material was applied, the field was plowed and the next spring he planted it to oats and seeded it down with clover and grasses. The oat field in 1949 showed a better color where the liquor had been applied most heavily, but threshing tests showed only a slight advantage for the treated strips.

In 1950, without further attention the field came up to clover and grass. In both the first and second crops, the clover came through much better in the treated strips.

Results in 1951, with the field still left uncultivated, show the differences fading but still noticeable. Considerably more clover remains in the treated strips than elsewhere in the field. But because the liquor has leeched and migrated through the soil, the outline of the strips are less definite than before. Where the clover has died out in strips, the stand of grass is two or even three times as heavy as in surrounding areas, and is a darker green of lush growth.

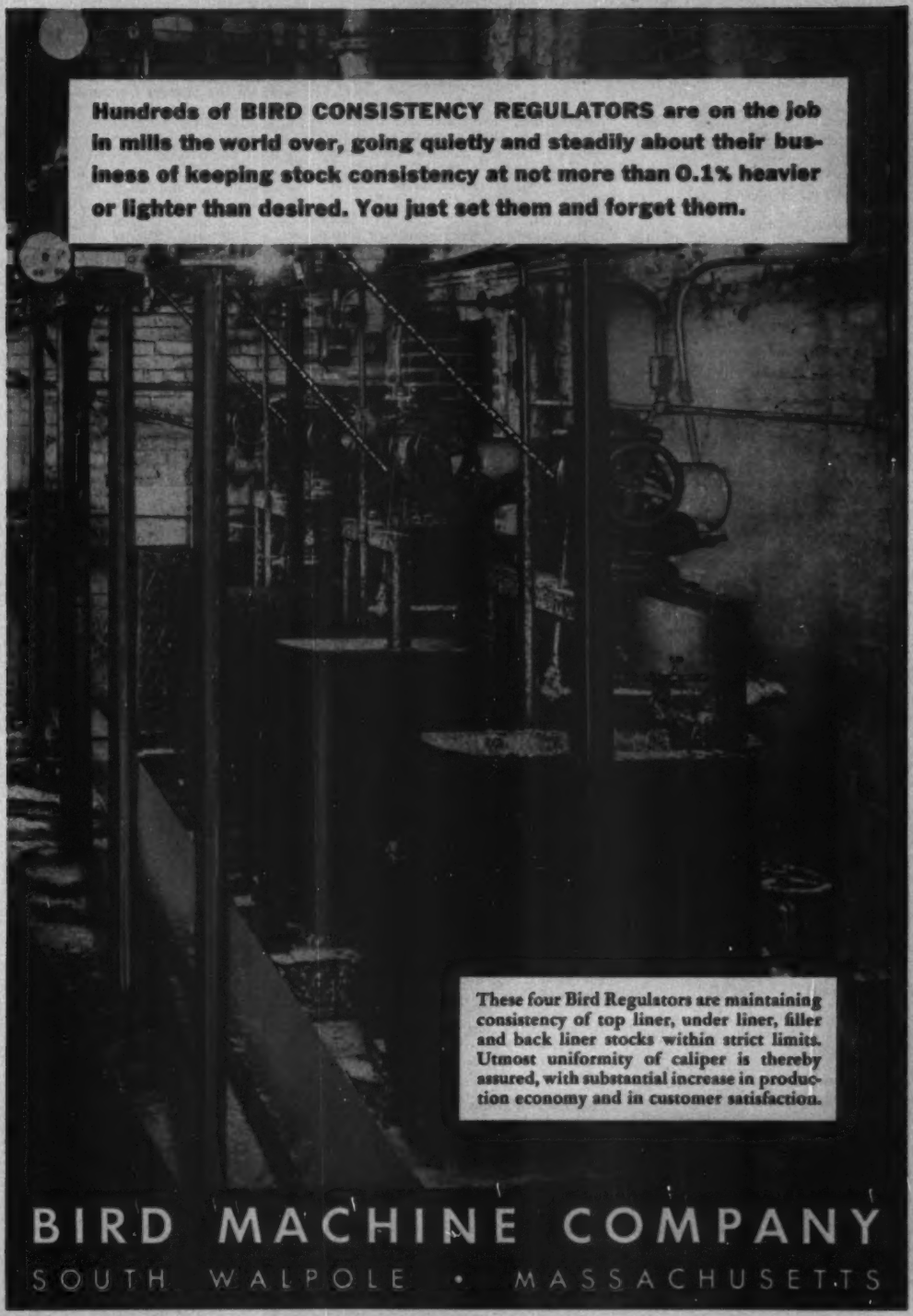
GET 2c HOURLY WAGE BOOST

HOLYOKE, Mass. — A two cents an hour increase in wages will be given the employees of the paper mills, according to a telegram received by John Dupre, president of Local 226, Paper Mill Workers Union. The increase is retroactive to June 4. The Wage Stabilization Board ruled in favor of the two-cent hike.

When the recent strike of the Eagle Lodge of Papermakers terminated, the manufacturers offered the union a wage increase of a cent and a half or two cents, whichever was approved by the WSB. Local 226 did not vote to strike but the members were idle because of the strike by the Eagle Lodge, the production element of the papermaking industry.

FREIGHT RATES RAISED AGAIN

Railroads are completing plans for the increase effective August 28. 9 percent is authorized for the Eastern Territory and 6 percent in the South and West.


Hundreds of BIRD CONSISTENCY REGULATORS are on the job in mills the world over, going quietly and steadily about their business of keeping stock consistency at not more than 0.1% heavier or lighter than desired. You just set them and forget them.
These four Bird Regulators are maintaining consistency of top liner, under liner, filler and back liner stocks within strict limits. Utmost uniformity of caliper is thereby assured, with substantial increase in production economy and in customer satisfaction.
BIRD MACHINE COMPANY
SOUTH WALPOLE • MASSACHUSETTS

Tinker on Taxes

August 3, 1951

Hon. Walter F. George, Chairman
Committee on Finance
U. S. Senate Office Building
Washington, D. C.

Re: Federal Taxes

Dear Senator George:

In defining the viewpoint of the pulp and paper industry with regard to the Federal Tax Program, no attempt is being made to cover the technical aspects of the proposed bill. Rather, the viewpoint of the industry with regard to the broad aspects as related to the public welfare are outlined. In addition, definite recommendations covering what we believe to be essential administrative controls are set forth. There is no doubt that in our industry, and in all probability in other industries, there is a sense of futility in even defining a position because of past tendencies to make decisions on the basis of political expediency, or what appears to be political expediency, rather than the general welfare. However, because we believe the issue is so vital to the continuance of the system of free enterprise in this country, we wish to place in the record a statement of the views of this industry which ranks sixth among our major manufacturing enterprises.

Defense Financing Dominant

The situation is such that there appears no question but that the tax program should be based upon the assumption that defense financing will be necessary for several years to come. If this is true then it is essential that the program be based upon principles that will assure expanding production facilities with appropriate incentives to such expansion. On the record, this expansion can best be obtained through the encouragement of private initiative. Any other course obviously will require direct action on the part of the government to develop new facilities under government ownership and control.

Present Trends

Where is the present trend in taxation leading us? With its graduated rates on incomes, both corporate and private, pushed to extremes in the high brackets, it has for all practical purposes removed the money incentive to produce, invent, and create real wealth by individual effort. At the same time it has dried up tremendous volumes of individual venture capital. Small corporations find it extremely difficult to grow, and large corporations are obliged to withhold distribution of earnings in the form of dividends in order to finance expansion of capacity. In the first quarter of 1951, 52 percent of corporate earnings went for taxes and only 18.8 percent was distributed as dividends. The balance, 29.2 percent, was undistributed. The tax collector took almost three times the cash that owners received from their businesses. The experience has been paralleled in the paper industry. Any tax legislation that takes away the rewards of initiative, efficiency, and enterprise, is not in the public interest and should not be accepted on the theory that it is temporary. The preceding statements appear to be almost axiomatic. Unless we are to accept a long road down towards the ultimate destruction of the economy of the United States, we must retain American free enterprise.

We believe that there is only one sound basis for acquiring the essential revenue to meet expanded requirements caused by the defense program and that is to broaden the base upon which taxes are levied. It is demonstrably true that we have reached the limit of income tax burdens if incentive is to be maintained. Whether the revenues are obtained through a sales tax at any level in the distribution system, expanded excise taxes, or other means, is relatively immaterial compared with the obvious necessity for recognition that corporate and individual taxes have reached or gone beyond the limit if we are interested in an expanded economy.

Effective Expenditures Necessary

It is our belief that a real effort is overdue on the part of the Congress to obtain the assurance of the effective expenditure of tax revenues and this applies not only to civilian but military agencies of the government. We recognize that this question has been dealt with in broad generalities and that the Congress itself has been much concerned with it. However, we do not believe that any effective measures have been taken to assure results. The nation can no longer afford the luxury of waste, either in private affairs or in government. In view of the record, we know that the burden of proof falls overwhelmingly on those who would justify spending the public dollar. Since defense now consumes the greatest part of the dollar, defense spending should be subject to the most effective pressure for economy.

Recommendations

We recommend that the Congress authorize its Armed Services Committee, or Appropriations Committees, to create their own staff or staffs for a continued check on the spending activities of the defense agencies. We suggest a far more intensive, extensive and continuous checking process than that which has been carried on, however, effectively, by the Committee of Executive Expenditures.

Task Forces

Ideally, this staff might consist of a series of task forces similar in character to those who carried on the work of the Hoover Commission. Each would be headed by some experienced senior industrial executive or by some other equally capable citizen. Each force would include qualified engineers, accountants and management experts. To each would be assigned the continual survey of some major branch of one of the armed services. Each task force leader would serve the military chief in that field, much as an experienced corporate director serves the chief executive of his own company, primarily by raising searching questions on critical matters of policy and practice bearing on economy in the use of national resources and funds. These task force leaders should derive their authority from the responsible committees of the Congress. Their work with the military establishments would be strengthened by the fact that they would make periodic reports of findings and results to the appropriate Congressional Committees. We are convinced that only by some such process as suggested, involving the knowledge on the part of the Congress itself of the facts of the situation, is there hope that the taxpayer's dollar will be assured of effective use.

Curtailment of Non-defense Agencies

We believe that it is essential that government bureaus and agencies be brought to a recognition by similar treatment that their ambitions and plans must be limited by the requirements of the defense program. The very fact that there has been little concrete evidence on the part of the Bureau of the Budget (or administrative agencies) that a curtailment of their activities is as essential as the controls that are being placed upon industry and the sacrifices that are being required of the civilian economy, is concrete evidence of the necessity to do this. A general public knowledge that governmental agencies in the civilian departments are proceeding with expanded plans covering their activities, is one of the factors that has made it difficult to obtain realization on the part of the public that the defense program requires *sacrifice*. We believe leadership in the Congress should recognize this fact and insist that this recognition carries with it a limitation on the availability of appropriations to civilian departments, particularly because the immediate situation promises to be extended over a period of several years.

The power to tax is the power to destroy. No one with a semblance of patriotism wishes to see our free economy or private initiative liquidated; albeit, it is true that we have reached a point where under the existing tax picture they are in grave jeopardy. All thinking men will realize that further

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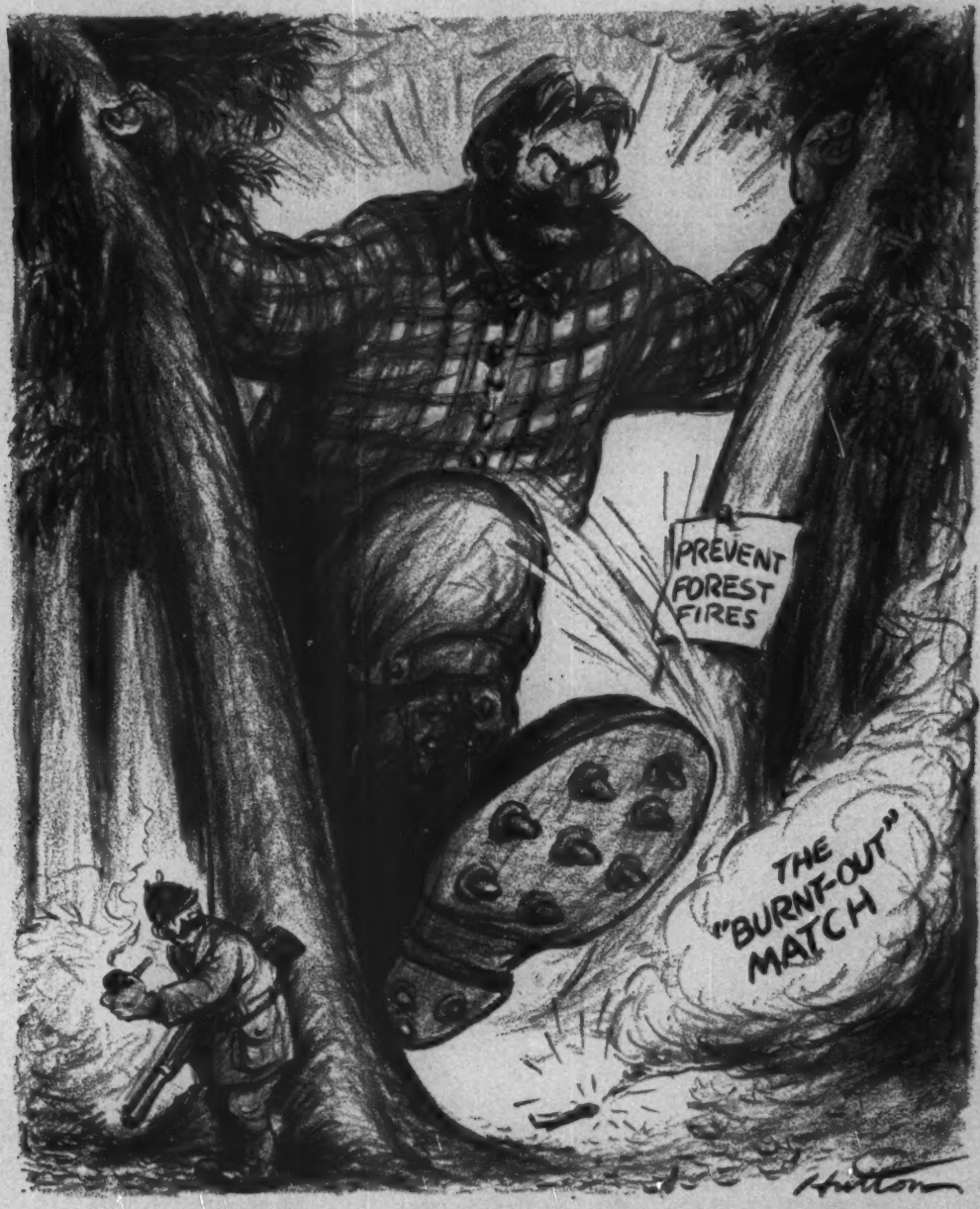
BLEACHED AND UNBLEACHED
CHEMICAL AND MECHANICAL WOOD PULP



YOU DON'T HAVE TO BE PAUL BUNYAN TO STAMP IT OUT

A reproduction of this incident from the fabulous life of Paul Bunyan—the fifty-ninth of a series—will be sent on request. It will contain no advertising.

steps in the same direction will inevitably bring about changes that will irreparably damage our free economy. It is the belief of this industry that the recognition of its grave responsibility on the part of the Congress offers the only hope of avoiding the economic and social tragedy that threatens.

There is little doubt in our mind that general public opinion in the country needs only a little dynamic leadership to bring about a public outcry that would ward off the threat that exists. It is also our belief that political considerations should be discarded, the interests of individual groups submerged, and a program developed that will assure the control of inflation, maximum production, a balancing of the budget, and the maintenance of our institutions without revolutionary changes in our free economy.

Very truly yours,
E. W. TINKER,
Executive Secretary,
American Paper and Pulp Assn.

(Ed. Note: If you have not written your Representative, do it now! You can be too late.)

UNITED STATES SENATE
COMMITTEE ON FINANCE
August 6, 1951

Mr. E. W. Tinker
Executive Secretary
American Paper and Pulp Association
122 East 42nd Street
New York 17, New York
Dear Mr. Tinker:

I am glad to receive your letter defining the viewpoint of the pulp and paper industry with regard to the Federal Tax Program.

I appreciate your courtesy in writing me and I shall be pleased to bring your letter to the attention of the members of the Senate Committee on Finance during our executive study of Revenue Act 1951.

With best regards, I am
Sincerely yours,
WALTER F. GEORGE,
Chairman.

RECORD PULPWOOD SALE

The biggest pulpwood sale in southern history was made August 6 when M. D. Womack of Lufkin, Texas, bid $926,750 for 275,000 cords of unpeeled pine in the Angelina and Davey Crockett national forests.

Regional Forester Charles Connaughton said the volume and value of this sale were more than double those of any pulpwood sale made previously. Its total value, he added, is exceeded by only two sawtimber sales in the south.

The pulpwood will be cut from 55,000 acres in the East Texas preserves.

Under the contract, Mr. Womack will have until June 30, 1961, to make the cutting.

In addition, the contract calls for a reappraisal June 30, 1952, to adjust prices to the current market rate.

JULY NEWSPRINT REPORT

NEWSPRINT ASSOCIATION OF CANADA, MONTREAL

I. PRODUCTION AND SHIPMENTS in short tons: 2,000 pounds		JULY 1951	JULY 1950	JULY Percent Change	YEAR TO DATE 1951	YEAR TO DATE 1950	YEAR TO DATE Percent Change
1. Canadian Production: including Newfoundland	month and year to date	452,435	439,255	+ 3.0	3,201,140	3,030,826	+ 5.6
	per working day	17,955	17,362	+ 3.4	17,804	16,960	+ 5.0
	percent of capacity	103.2	102.0		102.3	99.6	
2. Canadian Shipments: including Newfoundland	to United States	385,731	413,604	— 6.7	2,769,465	2,721,037	+ 1.8
	to Canadian Consumers	29,097	29,143	— .2	207,042	202,638	+ 2.2
	to Other Markets	28,118	20,592	+36.5	144,800	92,468	+82.5
	total: all markets	442,966	463,339	— 4.4	3,145,307	3,016,143	+ 4.3
3. U. S. Production:	month and year to date	88,441	86,127	+ 2.7	638,909	570,775	+11.9
4. U. S. Shipments:	to U. S. Consumers	86,568	84,149	+ 2.9	633,568	563,106	+12.5
	to Other Markets	267	1,284	—79.2	4,962	9,715	—48.9
	total: all markets	86,835	85,433	+ 1.6	638,530	572,821	+11.5
5. U. S. Imports from Europe:	*estimate; see Table 8	*19,300	13,404	+44.0	119,492	97,214	+22.9

II. CONSUMPTION AND STOCKS in short tons: 2,000 pounds		JULY 1951	JULY 1950	JULY Percent Change	YEAR TO DATE 1951	YEAR TO DATE 1950	YEAR TO DATE Percent Change
6. U. S. Consumption:	estimated total	435,869	440,208	— 1.0	3,384,611	3,391,031	— .2
7. North American Stocks:	U. S. Consumers	730,389	599,133	+21.9	730,389	599,133	+21.9
	Canadian Mills	144,975	135,873	+ 6.7	144,975	135,873	+ 6.7
	U. S. Mills	8,620	8,768	— 1.7	8,620	8,768	— 1.7
	estimated total	883,984	743,774	+18.9	883,984	743,774	+18.9
8. A.N.P.A. Report: 525 Newspapers	Consumption	333,440	336,759	— 1.0	2,589,227	2,594,139	— .2
	Stocks (tons)	500,445	432,564	+15.7	500,445	432,564	+15.7
	Stock (days)	46	40		46	40	

Similar readjustments will follow at two-year intervals.

The bid price was $3.37 per standard cord, including $2.87 for stumpage. The other 50 cents per cord is set aside as a special deposit for the betterment of the sale area after the harvest.

HUBBS CONFERENCE

The four divisions of Hubbs & Howe Co., Buffalo, Cleveland, Rochester and Erie, will hold a Sales Conference September 8th and 9th at Hotel Conneaut, Conneaut Lake, Ohio.

Well-known men in the paper industry are on the program for the business sessions, including J. B. Catlin, general merchandising manager, Kimberly-Clark Corp., Neenah, Wis.; Philip O. Deitsch, administrative officer, The Waterproof Paper Manufacturers Assn., and managing director and secretary, The Gummed Industries Assn., New York, N. Y.; Dernell Every, secretary, The Kraft Paper Assn., Inc., New York, N. Y.; F. K. Doscher, vice-president, Lily-Tulip Cup Corp., New York, N. Y.; John Maloney, head of the Paper Division, National Production Authority, Washington, D. C.; William Gove, sales development manager, Minnesota Mining & Mfg. Co., St. Paul, Minn.; A. Ellis Frampton, mgr. of Adv. & Sales Development, Hammermill Paper Co., Erie, Pa.

NAME BULKLEY, DUNTON

Bulkley, Dunton & Co. have been appointed distributors for the entire Gilbert Paper Co. line, it was announced by J. C. Marvin, vice-president. As of August 1, 1951, Gilbert papers will be handled by Bulkley, Dunton in the territories served by the company's offices in New York, Newark and New Haven.

NEWSPRINT CONSUMPTION

Daily newspapers reporting to the American Newspaper Publishers Assn. consumed 330,440 tons of newsprint in July, 1951 compared with 336,759 tons in July, 1950 and 313,118 tons in July, 1949. This was a decrease under July, 1950 of 1.0% and an increase over July, 1949 of 6.5%. This is the second consecutive month, and the third time this year, that consumption for the curent month has shown a decrease compared with the corresponding month in 1950. There were 5 Sundays each in July, 1951, 1950 and 1949.

Stocks of newsprint on hand and in transit at the end of July, 1951 were 46 days' supply for the average of all daily newspapers reporting to the ANPA. This was an increase of 9 days' supply as compared with the end of June, 1951 and the highest since the end of July, 1949 when there was 49 days' supply. There was a 40 days' supply at the end of July, 1950.

The total estimated newsprint consumption in the United States for July, 1951 was 435,869 tons which includes all kinds of uses of newsprint. For the first seven months of 1951, it is estimated at 3,384,610 tons. During the first seven months of 1951, the reporting newspapers used 2,589,227 tons of newsprint, a decrease of 0.2% under the first seven months of 1950 and an increase of 6.4% over the first seven months of 1949.

GOVERNMENT GOSPEL

OPS Postpones Effective Dates

An indefinite postponement of the mandatory effective date of six basic manufacturing regulations was granted by the Office of Price Stabilization.

The purpose of this action is to preserve the status quo until OPS can issue regulations to carry out the so-called Capehart amendment to the Defense Production Act of 1950.

OPS had previously set August 13 as the deadline for five of the manufacturers' regulations and August 15 for the Apparel Regulation.

OPS had expected to issue adjustment provisions to carry out the Capehart amendment prior to August 13.

OPS officials said, however, that the problems encountered in trying to work out procedures under this amendment made it impossible to meet that early target date for issuing the adjustment provisions.

The Capehart amendment provides that "upon application and a proper showing of . . . prices and costs" the OPS shall adjust ceilings to reflect cost changes, including overhead, up to July 26. The OPS manufacturing regulations do not take into consideration increases or decreases in overhead costs and use an earlier cut-off date for figuring increases in materials and factory labor.

This action extends the compulsory filing and reporting provisions as well as the compulsory pricing provisions.

Affected by the action are the general manufacturers' regulation (CPR 22); machinery (CPR 30); cotton textile manufacturers' (CPR 37); shoe manufacturers' (CPR 41); apparel manufacturers (CPR 45) and wool yarns and fabrics (CPR 18—Revised).

Thus many manufacturers, who have not already started pricing under these regulations, would have been forced to roll back prices under the existing terms of the regulations on August 13, and then permitted to come in at a later date and make application under this amendment for an adjustment which might have reduced or eliminated the amount of the rollback.

Although this action indefinitely postpones the compulsory effective date of these regulations, manufacturers at their option may elect to come under them at any time. In the case of CPR 22 and CPR 30, manufacturers who may wish to put increased prices into effect under the regulations, must also put all rollbacks into effect at the same time. Manufacturers who have already put CPR 22 and 30 into effect by selling at the increased prices permitted by the regulations must continue to keep the regulations in effect and apply all rollbacks required under them. An amendment to each of the regulations affected was issued.

Kraft Industry's Pricing Problem

Members of the Kraft Paper Industry Advisory Committee at their second meeting with OPS officials made detailed recommendations on the proposed provisions of a tailored regulation for their industry which would fix dollars and cents ceiling prices on seven key grades of unbleached kraft paper manufactured in integrated mills in the South and West.

The dollars and cents ceilings would apply to about 60 percent of the unbleached kraft paper produced in the country. Other grades made by these mills, amounting to another 20 percent of the nation's total production, would be determined by differentials from key grades. Historic differentials would also apply to special size rolls and sheets, variations in weight, colors, packaging and small lots.

Under the proposed regulation integrated manufacturers in the Northeast and Lakes states, who make about 6 percent of the total production of unbleached kraft paper, would employ as their ceilings the ceilings they had in effect on a specified date, possibly at the level under the General Ceiling Price Regulation. These mills mostly produce high grades of specification papers at premium prices.

Integrated mills account for 86 percent of the total national production of kraft paper.

The balance of 14 percent is produced by non-integrated or converter mills, whose costs tend to be higher because they must purchase market pulp.

Under the proposed regulation ceiling prices of non-integrated manufacturers of unbleached kraft paper might be fixed at the level of the Manufacturers' General Ceiling Price Regulation, CPR 22.

The different pricing devices for different segments of the industry were proposed because of the peculiar character of the industry. Mills in the South and West generally are low cost mills operating with modern equipment where pulpwood is abundant. To meet the competition of the low cost mills in the South and West, Northeast manufacturers have tended to specialize in quality and specification papers. The converter mills, moreover, could not operate profitably at ceilings which would be adequate for the integrated mills.

The key grades on which it is proposed to spell out ceilings are: Wrapping paper, counter rolls; butchers' paper, counter rolls; grocery and variety bag paper, mill rolls; shipping sack paper, mill rolls; gumming paper, mill rolls; envelope paper, mill rolls.

The proposed prices discussed for these key grades were weighted averages of GCPR prices, which means that the regulation might retain GCPR ceilings for almost 90 percent of the unbleached kraft paper industry.

Unbleached kraft paper is defined as any paper of G.E. brightness of less than 35, containing 75 percent or more of unbleached kraft sulphate fibre in basis weights of 18 pounds or more. The South and West are described as all areas south of Ohio and all territory west of the Rockies.

Ask First Quarter 1951 As Base Period

Subcommittees of the Wrapping Paper Merchants Industry Advisory Committee and the Fine Paper Merchants Industry Advisory Committee have made detailed recommendations on a proposed draft of a tailored regulation being prepared for their industry by OPS.

Members strongly recommended a single regulation whereunder paper merchants would determine their ceilings by applying their base period percentage markups to the cost of paper products to them.

The regulation would follow the pattern of Supplementary Regulation 29 to the General Ceiling Price Regulation but would make special provision for practices in the industry with respect to packaging, delivery, size of shipments, services such as trimming and perforating, and other particulars.

Members recommended that the first quarter of 1951 be employed as the base period in their regulation. Committeemen said their industry was in a depressed period immediately before the outbreak of the Korean war, particularly between May 24 and June 24, 1950, the interval mentioned for wholesalers in the new amendment to the Defense Production Act. Competition and need to move inventories had depressed margins. Committeemen made suggestions how data could be obtained to support the selection of the alternate base period.

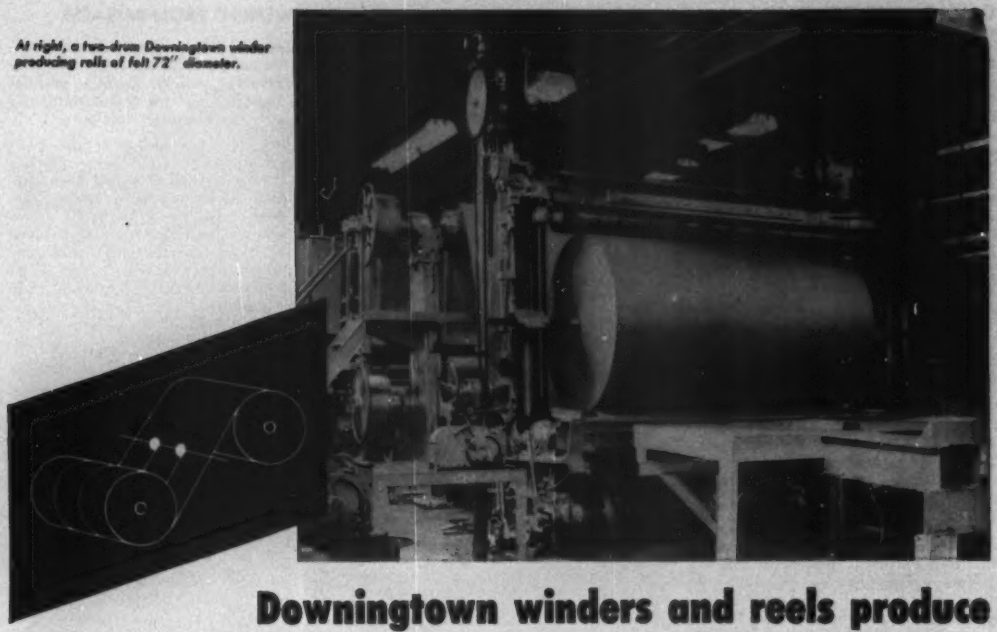
Committeemen said it would be impossible to write an equitable regulation based on uniform fixed margins because costs of distribution were higher in populous areas and varied from place to place across the United States.

Members of the subcommittee present were: I. W. Carpenter, Carpenter Paper Co.; A. T. Bermingham, Bermingham & Prosser Co.; Gordon Kerwin, Graham Paper Co.; R. E. Knox, Knox and Schneider; P. M. Jones, Storrs and Bement Co.; Morris Balter, Morris Balter Co.; and F. H. Blackman, Stone and Forsyth Co.

ANNUAL GOLF PARTY

The Miami Valley Division of The American Pulp and Paper Mill Superintendents Assn. is to be guest of Black-Clawson-Shartle-Dilts at its annual golf party. The party is to be held on September 14, at the Elks Country Club, Hamilton, Ohio.

At right, a two-drum Downingtown winder producing rolls of felt 72" diameter.



Downingtown winders and reels produce clean, uniform rolls . . .

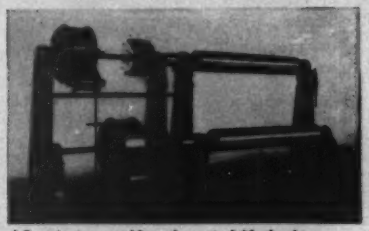
Standard Downingtown high-speed, heavy type winders and reels are designed to handle rolls up to 72" diameter and to meet present high production speeds.

Winders are the two-drum type and equipped with anti-friction bearings throughout, with positive acting brakes, variable speed clutches. Several combinations of top and bottom slitters are provided to meet varying requirements of the end products.

Downingtown reels are of the constant speed or upright type with anti-friction bearings furnished throughout. Friction brakes and clutches are designed for mechanical or air operation.

From starting core to finished diameter, Downingtown winders and reels produce uniformly wound rolls having perfectly clean sides, free of dust, without slitter cracks and with no interweaving.

Write for detailed descriptions of Downingtown winders and constant speed and upright reels or consult your Downingtown engineer.



A Downingtown reel from the control side showing air operated clutch and brakes.

A Downingtown constant speed reel located before the winder shown at the top of the page.

DOWNINGTOWN MANUFACTURING CO., DOWNINGTOWN, PA.

Pacific Coast Representative: John V. Roslund, Pacific Bldg., Portland 4, Oregon

DOWNINGTOWN

WINDERS & REELS

DESIGNERS AND BUILDERS OF PAPER, BOARD AND FELT MACHINES SINCE 1880

DAMAGE SUIT DISMISSED

PHILADELPHIA — The $336,550 damage suit of the Paterson Parchment Co. against the AFL Paper Makers has been dismissed by the U. S. Third Circuit Court of Appeals. The decision upheld a ruling made by a district court here last November.

The Bristol, Pa., company had sued the Paper Makers and Local 500 over a 1948 strike, charging that the union had breached the contract by violating a non-strike agreement. The Court of Appeals ruled, however, that the union had given a proper 60-day notice of termination of the contract, as provided for in the pact, and when negotiations toward a new contract failed, the "obligations of the contract ceased to exist."

Louis H. Wilderman, attorney for the Paper Makers, said the decision was a significant one for all unions. Two items in the court's opinion were of particular importance, Wilderman said.

One was that it was not absolutely necessary to use the word "terminate" to make clear the intent of a notice of termination. Section 15 of the contract provided that either party could terminate the contract on written notice not less than 60 days before expiration. The local's letter of notice used the language, "notification in compliance to the 60 days notice stipulation."

"This clearly means notice of termination under Section 15 of the contract," the three-man court's unanimous opinion, written by Judge Hastie, read: "Intended as notice of termination, the words used are adequate for the purpose."

The second point emphasized by Wilderman was that the court made it clear that agreements to keep an old contract in force during negotiations are no longer binding when negotiations have been concluded. This holds true whether the negotiations end in success or failure, the court held.

The Paterson contract contained such a stipulation in Section 15, providing that if there should be a delay in negotiating a new agreement, the existing agreement should remain in force until a new one was reached. Termination initiated by either party could be suspended by this provision.

The court ruled here that both parties had recognized that discussions in 1948 had reached an impasse and they broke off negotiation meetings with the understanding they would not meet again.

It was clear that negotiations had come to an end, the court ruling pointed out, thus canceling the contract-extension agreement and lifting the suspension applied to the union's notice of termination. All obligations of the contract thus ceased to exist.

PEOPLE

WILLIAM J. SPRAU has been appointed production engineer for National Gypsum Co.'s four paper plants. In his new capacity, Mr. Sprau will supervise the standardization of procedures among the four plants and also will be in charge of equipment modernization. Mr. Sprau has been plant engineer at National's Kalamazoo, Mich., plant for the past four years. He spearheaded the design of the company's $4 million paper plant at Pryor, Okla., now under construction.

Before joining National Gypsum in 1947, he served as assistant chief engineer for the Detroit Sulphite Pulp and Paper Co.

W. F. KALLOCK of Ware, Mass., has been named plant manager of the Marvellum Co., Holyoke, Mass., succeeding RICHARD S. FAY who has been moved up to general sales director of the plant.

Mr. Kallock had been connected for the past 16 years with the McLaurin-Jones Co. Prior to that he was with Eastman Kodak Co. for five years.

WARREN B. NEVILLE has been appointed Philadelphia Industrial District sales manager for the Scott Paper Co. Mr. Neville became associated with the Scott company in 1948, and was named District sales manager of Reading, Pa., in 1950. He succeeds Thomas B. Donahue, who has been made executive assistant to the Southern Retail Sales Divisional manager in Atlanta, Ga.

NEWSPRINT FROM BAGASSE

MADISON, Wis.—Sugar cane bagasse, the fibrous material left after the juice is extracted, offers distinct promise as a raw material for the manufacture of paper of newsprint quality.

That was the verdict of the U. S. Forest Products Laboratory officials here after bagasse pulp had been successfully made into paper closely resembling standard wood-pulp newsprint in quality. The tests were made at the government-owned laboratory in cooperation with the De la Roza Corp. of New York City, using pulp made in accordance with a process invented by Joaquin de la Roza, Sr., president of the firm.

De la Roza has plans to build a paper mill for the United Bagasse Cellufose Corp. at Clewiston, Fla., where the United States Sugar Corp. has a cane sugar mill. The paper mill would process thousands of tons of bagasse annually produced by the sugar mill into newsprint-type paper.

In a letter to De La Roza, G. H. Chidester, chief of the Laboratory's Division of Pulp and Paper, stated:

"The paper made in this trial had physical properties approaching closely those of standard newsprint. The strength properties of the paper were considerably higher than the standard and the sheet was much whiter. A considerable amount of filler was used, but the opacity of the sheet was slightly lower than the standard. These differences, however, are small and it is indicated that with minor adjustments the standard physical properties of newsprint could be attained."

Pulping tests by the De la Roza process, Chidester's letter stated, indicated good possibilities of controlling the yield, strength and chemical composition of the pulp for various use requirements.

The De la Roza Corp. cooperated in the tests at the laboratory, which is operated by the Forest Service of the U. S. Department of Agriculture, to get technical data on which to base a request to the Defense Production Administration for a certificate of necessity for the Florida mill. Newsprint is recognized by DPA as a critical defense material.

Representatives of a Havana, Cuba, bank observed the tests. They are Dr. Emiliano Ramos and Dr. Mario Filippi.

The De la Roza pulping process is based, its inventor explained, on the extraction of residual sugar contained in bagasse pith cells before the bagasse is pulped. In this respect it differs from other processes, which require removal of the pith before pulping the remainder of the fibers. Pith cells comprise about 40 percent of all fibers in bagasse. De la Roza contends that, once the residual sugar is removed, the pith cells improve the quality of the paper.

These pictures of a paper mill storage yard show how easy it is to overlook valuable scrap.

You lose when scrap plays Hide-and-Seek

Looks as though this paper mill has a clean storage yard, doesn't it? But let's look closer, beneath the weeds. Tons of iron and steel scrap are hidden here.

Could this be true of *your* storage yard?

If so, there are two good reasons why you should gather up this worn-out iron and steel equipment and call your scrap dealer *immediately*. Most important, steel mills are in desperate need of scrap. Unless much more scrap is turned in there is danger that steel production may be cut in the months to come. And our nation's defense program may suffer through the steel shortage.

The high price of scrap is another good reason. You get more actual cash for your old iron and steel by selling now.

Take these two simple steps: Survey your mill and storage yards for worn-out iron and steel parts and equipment; then call your local scrap dealer. But don't stop here. Make plans now to establish a regular scrap collection program in your mill.

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International Symposia Appleton and Montreal

Two milestones in the international quest for knowledge in the Fundamentals of Cellulose and Lignin will take place in September.

From September 17-21 at the Institute of Paper Chemistry the program will be:

September 16—3:00 p.m. Hotel Conway. Closed meeting of the Wood Chemistry Subcommittee, FAO.

September 17—9:00 a.m. The Institute of Paper Chemistry. Open technical sessions of the Wood Chemistry Subcommittee, FAO. Introductory Remarks. Herman Mark, Committee Chairman; Harry F. Lewis, in charge of program arrangements.

Tropical Woods As A Source Of Pulp

Chairman W. G. Campbell, Forest Products Research Laboratory, Princes Risborough, England.

1. Species Sampling on a Reproducible Basis. D. E. Cohen, Commonwealth Scientific and Industrial Research Organization, South Melbourne, Australia.

2. Tropical Wood Distribution and Forestry Practice. Robert W. Hess, formerly Yale School of Forestry, now The Mengel Co., Louisville, Ky.

3. The Physical Characteristics of Tropical Woods. Frederick Wangaard, Yale School of Forestry, New Haven, Conn.

4. The Chemical Characteristics of Tropical Woods. Louis E. Wise, The Institute of Paper Chemistry, Appleton, Wis.

5. Morphology and Fiber Measurements of Tropical Wood Fibers. Irving H. Isenberg, The Institute of Paper Chemistry.

6. Discussion of the value of laboratory data on the screening of tropical woods.

September 17—1:30 p.m. The Institute of Paper Chemistry. Tropical Woods as a Source of Pulp (continued). Chairman J. Albert Hall, Director, U. S. Forest Products Laboratory, Madison, Wis.

7. Pulping Studies with the Tropical Woods of Brazil. L. Rys, Industrias Klabin do Parana de Cellulose, Brazil.

8. Pulping Studies with African Tropical Woods. R. Peteri, Chief, Research Department, Régie Industrielle de la Cellulose Coloniale, Paris, France.

9. Pulping Studies with Colonial Tropical Hardwoods as Papermaking Materials. H. E. Coomber, Colonial Products Advisory Bureau (Plant and Animal), South Kensington, England.

10. Viscose Rayon Pulps from Chilean Coigue, Tepa, and Ulmo. F. A. Simmonds and R. M. Kingsbury, Forest Products Laboratory, Madison, Wis.

11. Development of Chemical and Semichemical Pulping Processes from Tropical Hardwoods from West Africa. Roland O. H. Runkel, Federal Institute for Forest and Wood Research, Reinbek, Germany.

12. Chemical Pulps from Australian Eucalyptus. A. Meller, Australian Paper Manufacturers Limited, South Melbourne, Australia.

13. Chemical Utilization of Tropical Hardwoods. W. G. Campbell.

14. Summary of papers 7-13. John N. McGovern, Forest Products Laboratory, Madison, Wis.

September 18—9:00 a.m. The Institute of Paper Chemistry.

Chemical Utilization Of Agricultural Residues

Chairman J. E. Atchison, Pulp & Paper Branch, Economics Cooperation Administration, Washington, D. C.

15. Characteristics of Pulp Fibers from Agricultural Residues. E. C. Lathrop, U. S. Dept. of Agriculture, Northern Regional Research Laboratory, Peoria, Ill.

16. Cereal Straw Pulping in Great Britain. L. G. S. Hebbs, Cross & Bevan, Bedfordshire, England.

17. Developments in Straw Pulping in The Netherlands. F. M. Muller, Netherlands Proefstation Voor Stroverwerking, Groningen, The Netherlands.

18. Recent Developments in the Pulping of Straw in the United States. S. I. Aronovsky, U. S. Dept. of Agriculture, Northern Regional Research Laboratory, Peoria, Ill.

19. Modern Industrial Pulping of Straw and Bagasse. Alexander Kasser, Parsons and Whittemore, Inc., New York, N. Y.

20. Discussion of papers 15-9. J. E. Atchison and W. O. Hisey, Sandy Hill Iron & Brass Works, Hudson Falls, N. Y.

September 18—1:30 p.m. The Institute of Paper Chemistry. Chairman Herman Mark, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.

21. General discussion of the possibility of establishing FAO standard methods in the field of wood chemistry and pulp and paper, under the leadership of R. G. Macdonald, Secretary of the Technical Association of the Pulp and Paper Industry, New York, N. Y.

22. Report on the Determination of Lignin. W. E. Cohen.

23. Progress Report on the Technical Assistance Program of the FAO. E. Moerath, Food and Agricultural Organization of the United Nations, Rome, Italy.

24. Open discussion on the past, present, and possible future program of the Wood Chemistry Subcommittee, FAO, under the leadership of Herman Mark.

Guided tours of the laboratories and other facilities of The Institute of Paper Chemistry at the close of the Tuesday afternoon session. The laboratories and library are open for informal visits throughout the week.

September 18—8:00 p.m. Closed business meeting of the Wood Chemistry Subcommittee, FAO.

September 19—9:00 a.m. The Institute of Paper Chemistry. Open Technical Sessions of the Pulp and Paper Symposium. Chairman Clifford B. Purves, McGill University, Montreal, Canada.

25. The Cause of the Reddening of Pulps and Its Technical Significance. E. Adler, Swedish Forest Products Research Laboratory, Stockholm, Sweden.

26. Dynamic Measurements of the Physical Properties of Pulp and Paper by Audio-Frequency. Masao Horio, Kyoto University, Kyoto, Japan.

27. The Formation of Lignin in Wood and Its Removal during Pulping. K. Freudenberg, University of Heidelberg, Heidelberg, Germany.

28. The Chemical Composition of Fiber Fractions from Nonbeaten and Beaten Fiber Materials. Öyvind Bryde, Vestfos Cellulosefabrik, Vestfossen, Norway.

29. The Cause of Foaming of Green Groundwood. John W. Green, The Institute of Paper Chemistry.

September 19—1:30 p.m. The Institute of Paper Chemistry.

30. Panel Discussion. Subject: What Shall We Do with Spent Sulfite Liquor? Moderator: Harry F. Lewis. Panel members: Öyvind Bryde, Vestfos Cellulosefabrik; Heinz Haas, Zellstofffabrik Waldhof; William Herriott, Kimberly-Clark Corp.; Jesse M. Holderby, Lake States Yeast Corp.; Warren Lemke, International Paper Co.; Irwin Pearl, The Institute of Paper Chemistry; Curt Rosenblad, Rosenblad Corp.; J. R. Salvasen, The Marathon Corp.; Charles A. Sankey, The Ontario Paper Co., Ltd.

September 19—6:30 p.m. Riverview Country Club. Complimentary dinner (informal) honoring the foreign guests. All members of the Symposium are invited. Reservations must be in by noon, September 17.

September 20—9:00 a.m. The Institute of Paper Chemistry. Chairman Emil Heuser, The Institute of Paper

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Chemistry, Emeritus, La Jolla, Calif.

31. The Isolation and Identification of the Sugars Present in the Hemicelluloses of Wood or Pulp. J. K. N. Jones, University of Bristol, Bristol, England.

32. The Distribution of Cellulose and Hemicellulose in the Cell Wall of Sulfite and Sulfate Pulps. Paul W. Lange, Swedish Forest Products Research Laboratory, Stockholm, Sweden.

33. The Characteristics of a Wood Pulp for Viscose Manufacture. Heinz Haas. Discussion of this paper to be led by Leif Jörgensen and Masao Horio.

34. Hot Alkali Stability and Acid Hydrolytic Resistance of Modified Cellulose. A. Meller.

35. A Report on Certain Recent Researches of Technical Interest in the Swedish Forest Products Research Laboratory. E. Hägglund, Swedish Forest Products Research Laboratory, Stockholm, Sweden.

September 20—1:30 p.m. The Institute of Paper Chemistry.

36. Panel Discussion. Subject: Pilot Planting for the Paper Industry. Moderator: Roy P. Whitney, The Institute of Paper Chemistry. Panel members: Karl Adamik, Institute of Wood Chemistry, Graz, Austria; G. H. Chidester, U. S. Forest Products Laboratory; Rodger M. Dorland, Abitibi Power & Paper Co., Ltd.; John S. Hart, Pulp and Paper Research Institute of Canada; Walter F. Holzer, Crown Zellerbach Corp.; D. J. MacLaurin, The Institute of Paper Chemistry; Börje Steenberg, Swedish Forest Products Research Laboratory.

September 20—6:30 p.m. Dinner meeting of the Lake States Section of TAPPI complimentary to the foreign members of the Pulp and Paper Symposium. Tickets should be purchased at the Hotel Conway. Speaker: Börje Steenberg, Director of Research, Paper Technology Department, Swedish Forest Products Research Laboratory, Stockholm, Sweden. Subject: The Influence of the Paper Machine on Paper Properties.

September 21. The Institute of Paper Chemistry. Three Informal Round Tables. 1. Lignin. 2. Cellulose and the Hemicelluloses. 3. Pulp and Paper.

While the above sessions will be largely informal, there will be one or two papers in each session to set off discussion. In the lignin session, for example, W. G. Campbell will describe his work on Acid-Soluble Lignin. In the Cellulose and Hemicellulose Round Table, G. F. Davidson of the Shirley Institute will cover the subject "The Oxidation of Aldehyde Groups in Oxycellulose" and M. Horio "Physicochemical Studies on Xylan—Size and Shape by Light Scattering, X-Ray Analysis and Birefringence." One of the subjects for discussion at the Pulp & Paper Round Table is that of pulp evaluation.

Canadian Program

Immediately following on September 24-26, the Pulp and Paper Institute of Canada will conduct an additional program as follows:

Industrial firms and government laboratories in Canada may send representatives to the Montreal meetings who are unable to get to those in the States.

The emphasis in the Canadian sessions will be on rather full presentation of a few major topics with a good deal of informal discussion. The first day will be devoted to six papers, each by a prominent authority and of 40 minutes to one hour in length, to be interlarded with discussion. The second day will be entirely devoted to a series of informal round-table discussions. That evening a banquet honoring the foreign guests will be held at the Hotel Windsor and the following day they will be entertained by Industrial Research Ltd. at its research laboratories in Hawkesbury, Ont. The outline of program is as follows:

September 23—7-9 p.m. Registration—Hotel Windsor.

September 24—8:30-9:30 a.m. Registration—New Physical Science Centre at McGill.

9:30-12:15. Symposium on Cellulose. Dr. W. E. Cohen (Australia), Officer-in-Charge, Wood Chemistry Section, Division of Forest Products, Commonwealth Scientific and Industrial Research Organization, Melbourne, Australia. "Chain Length Distribution Studies on Nitrated Wood and Cotton Celluloses," Dr. L. Jorgensen, Billeruds Aktiebolag, Saffle, Sweden. "Behaviour of Cellulose and Wood Polyoses ('hemicellulose') During Stepwise Hydrolysis and Extraction of Birch and Spruce Holocelluloses," Dr. J. K. N. Jones, Department of Organic Chemistry, Bristol University, England. "Origin of the Pentose Sugars."

12:30-1:45 p.m. Luncheon—Hotel Windsor.

2:00-5:30 p.m. "New Polymers and Their Use Together with Cellulose," Dr. Herman Mark, Director, Institute of Polymer Research, Polytechnic Institute of Brooklyn, Brooklyn, N.Y.

Symposium on Lignin. "Natural and Synthetic Lignin," Prof. Carl Freudenberg, Director, Chemical Institute, Heidelberg University, Heidelberg, Germany.

"Experiments on the Sulphite Pulping of Spruce Periodate Lignin," Prof. C. B. Purves, Head, Division of Industrial and Cellulose Chemistry, McGill University and Pulp and Paper Research Institute of Canada.

Evening—Small dinner parties at various colorful Montreal restaurants.

September 25—9:30 a.m.-12:15 p.m. and 2:00-5:00 p.m. Round-Table Discussions (Topics and locations to be announced).

6:30 p.m. Reception and Banquet—Hotel Windsor.

These symposia will bring together the world's leading cellulose and lignin scientists. So far as is known this is the first time these men have gathered in one place.

The expected participants are:

Prof. Dipl. Ing. Karl Adamik, Technische Hochschule, Graz, Austria; Dr. E. Adler, Swedish Forest Products Research Laboratory, Stockholm, Sweden; Dr. F. E. Brauns, The Institute of Paper Chemistry, Appleton, Wis.; Dr. Öyvinde Bryde, Vestfoss Cellulosefabrik, Vestfoss, Norway; Dr. W. G. Campbell, Forest Products Research Laboratory, Princes Risborough, Aylesbury, Bucks, England; Prof. Germano Centola, Cellulose Research Institute, Milan, Italy; Prof. Stig Claesson, Physico-Chemical Institute, Uppsala, Sweden; Dr. W. E. Cohen, Division of Forest Products, Commonwealth Scientific and Industrial Research Organization, South Melbourne, Australia; Dr. H. Corte, Research Department, Waldhof Zellstofffabrik, Mannheim-Waldhof, Germany; Prof. Terje Enkvist, Helsingfors University, Helsingfors, Finland; Prof. Carl Freudenberg, Chemical Institute, Heidelberg University, Heidelberg, Germany; Dr. H. Haas, Research Department, Waldhof Zellstofffabrik, Mannheim-Waldhof, Germany; Dr. L. G. S. Hebbs, Cross and Bevan, Arlesey, Bedfordshire, England; Prof. Masio Horio, Dept. of Textile Chemistry, Kyoto University, Japan; Dr. J. K. N. Jones, Dept. of Organic Chemistry, Bristol University, England; Dr. Leif Jörgensen, Billeruds Aktiebolag, Saffle, Sweden; Prof. Dr. O. Kratky, Institute for Theoretical and Physical Chemistry, University of Graz, Graz, Austria; Prof. Dr. Karl Kratzl, Chemical Institute, University of Vienna, Vienna, Austria; Dr. Paul Lange, Swedish Forest Products Research Laboratory, Stockholm, Sweden; Prof. Dr. W. Lautsch, Organic Chemistry Institute, Free University of Berlin, Berlin, Germany; Dr. Harry Lewis, Institute of Paper Chemistry, Appleton, Wis.; Prof. Herman Mark, Institute of Polymer Research, Polytechnic Institute of Brooklyn, Brooklyn, N. Y.; Dr. A. Meller, Australian Paper Mills Ltd., Victoria, Australia; Dr. R. Peteri, Regie Industrielle de la Cellulose Coloniale, Paris, France; Dr. Umberto Pomilio, Buenos Aires, Argentina; Dr. L. Rys, Industrias Klabin do Parana de Cellulose S/A, Monte Alegre, Brazil; Prof. Dr. A. von Wacek, Wood Chemistry Institute, Technische Hochschule, Graz, Austria.

25th PENJERDEL MEETING

The 1951 fall meeting of the Pennsylvania-New Jersey-Delaware Division of The American Pulp and Paper Mill Superintendents Assn., the 25th Anniversary Meeting of the Division, will include a full two-day program for both men and women. The program will include some new activities not previously scheduled.

The meeting will be held September 28-29 at Pocono Manor, Inn, Pocono Manor, Pa. The program will include:

1. Operation of O.C.O. Water System at S. Austin Bicking Paper Co., by Howard Wright, Production Chemist, S. Austin Bicking Paper Co.

2. Meeting the Challenge of Maintenance and Lost Time in the Paper Mill, by J. R. Curtis, Chief Engineer, Scott Paper Co.

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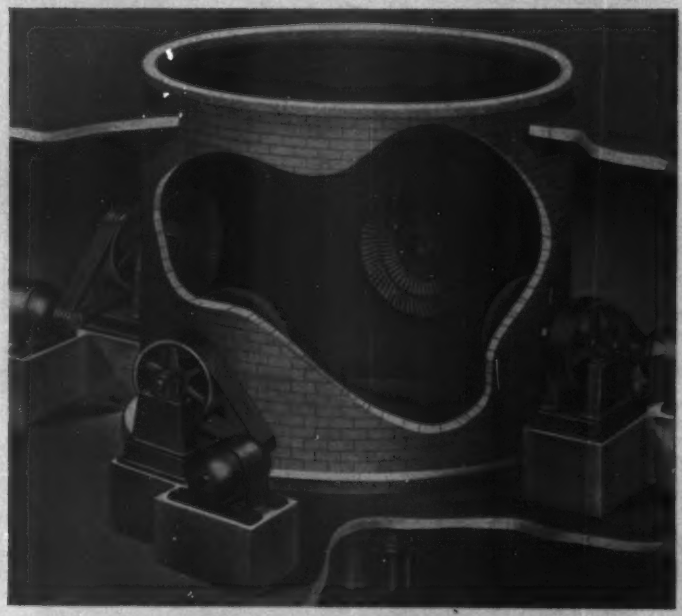
- The DynoFiner is for performing the same operation on a continuous basis.



THE stock is charged all at one time into the top of the vat. Four DynoPellers (described below) subject it to the vigorous dynomizing action that completely separates each fibre from its neighbor, maintaining its original length. The simple operating principle and design of the QuatroPulper eliminates the "wracking" and grief of other types of pulpers. Because there are few moving parts there is no loss of production time due to repair or adjustment. The QuatroPulper defibers the stock at low cost and produces a high quality slurry quickly and effectively.

The DynoPeller

is the heart of all DynoMachines. Its concave face is lined with rough, hard carbide particles. As the DynoPeller rotates it causes a suction at its center that pulls the stock towards it. Centrifugal force then causes the stock to flow rapidly over the rough carbide particles. This effective dynomizing action completely disintegrates the stock . . . separating each fibre from its neighbor while maintaining its original length.

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MAINTENANCE—VII OF SERIES

How to Prolong the Life of Water Removal Equipment

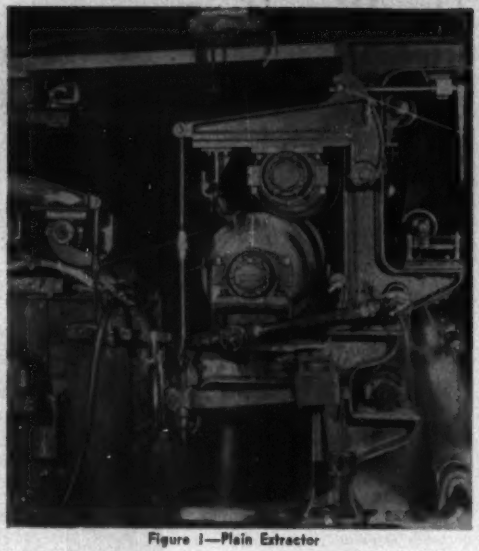

Figure 1—Plain Extractor

L. E. Smith[1]

We are again faced with the problem of conserving materials and manpower and must do so by prolonging the life of paper mill machinery by more than usual care, and prevention of emergency repairs due to improper maintenance.

The materials used in the manufacture of modern water removal equipment and necessary replacement parts are all highly strategic and must be conserved during the present National Emergency.

[1] Sales Engineer, Downingtown Mfg. Co., Downingtown, Pa.

The following suggestions are made to improve maintenance and prolong the life of this equipment.

Plain Extractor Unit

The plain extractor unit is a widely employed, low cost piece of primary water removal equipment for paper board machines, and when in service, will show a marked increase in tonnage, felt life, and overall operating efficiency. To insure continued service the best operating efficiency, the following rules should be observed:

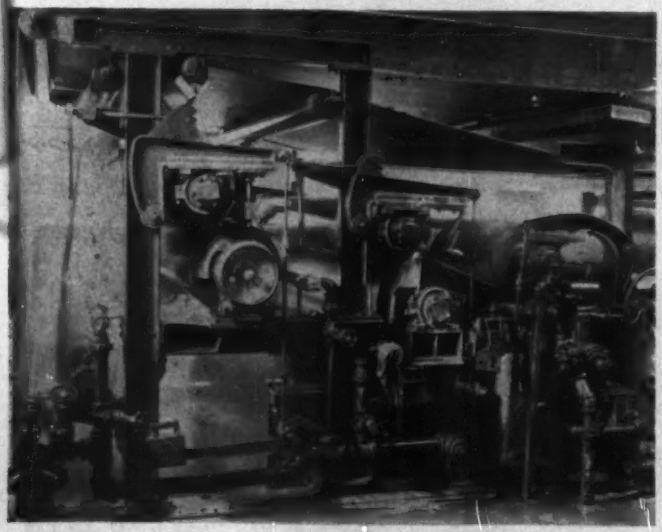

Figure 2—Suction Extractor following Plain Extractor

1. Adjust the lever weights and consequent nip pressure to suit the furnish, and in conjunction with the weighting of the primary presses and main presses. Do not over-weight so that the subsequent pressing operations are not doing their share of the work. Nip pressures of 50 to 75 pounds per lineal inch are normal.

2. The cleaning shower should be of fresh water having a water pressure of not less than 30 pounds at the shower pipe entrance and should be directed at an angle against the rotation of the roll for best results.

3. See that the top roll is in perfect alignment with the extractor roll. This should be checked at regular intervals, both with respect to faces and centers.

4. The top should be ground at stated intervals, depending on the machine product and speed, to insure that the crown stays within operating requirements. In addition, the life of the rubber cover will be extended materially. The crown should be checked occasionally to obtain an approximate idea of its condition.

5. Allow the extractor roll to rotate in a save-all pan fed by the water from the shower. This keeps the interior of the roll clean.

The plain extractor wire-faced roll body is of rugged construction and requires few replacements or repairs if the maintenance is right. The importance of the replacements is about as follows:

Wire Face: Bronze, should average eight months or better for a single face when properly applied and treated. This applies to both sewed and welded seams.

Winding Wire: Bronze, should average three to five years in life. This de-

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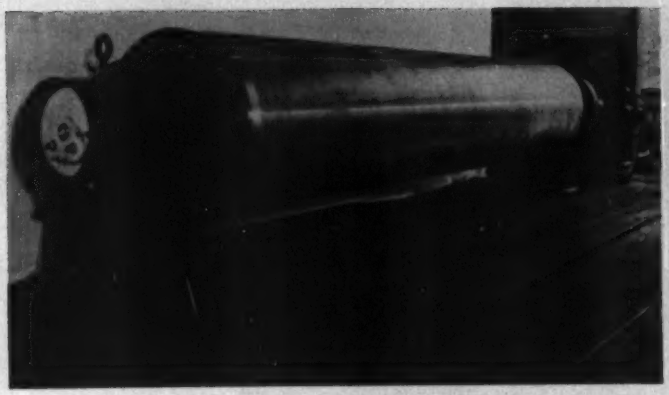

Figure 3—Suction Couch Front Cantilever Type

pends largely on weighting and corrosive influence.

Rods: These should last indefinitely and generally wear only due to corrosive actions.

Bearings: These will last indefinitely if lubricated at stated intervals and properly maintained to keep water out.

Most mills are using bronze face wires, but stainless steel face wires are rapidly coming into favor. These average an appreciably longer life than the bronze wires, approximately 1½ to 2 times as long. Stainless steel winding wires also have been used with improved results.

The bearings should be examined and cleaned at frequent intervals, and kept full of grease; thereby keeping moisture out of the rollers. The seals should be replaced when worn.

Great care must be exercised in putting on a new winding wire. This must be applied under constant tension to the rods, which have been properly and uniformly nicked, and the tension must not be so great as to bow the rods or cord the wire. After the winding wire is completely on and the ends fastened, it is anchored to the rods by soldering at 60-degree intervals. This is important because it prevents the wire from slipping.

The winding wire is knurled slightly before the face wire is applied to help anchor the face wire. It is often desirable when putting on a new winding wire to turn the rods 90 degrees and re-nick them, particularly if they are badly corroded.

Spare parts as listed below are the minimum that should be carried on hand:

One roller bearing complete (this serves as a spare for both the top and bottom roll)
One bundle of winding wire
One or more sets of face wires
One set of bronze rods

It is to be noted that for a double bronze wire face the average life is four months and for a single bronze wire face it is eight months. It is quite possible to extend this appreciably. The stainless steel faces, while there are not so many of them in operation, show a decided trend toward longer life.

Suction Extractor Unit

The suction extractor unit, when used in conjunction with a plain extractor, is one of the more recent developments toward low cost water removal on a board machine. Its construction is quite different from the plain extractor in that its shell and interior construction are similar to that of a suction press roll. However, over the spirally drilled bronze shell is applied a wire face similar to that of the plain extractor. This roll, as in the case of the plain extractor, is not driven.

For maximum operating efficiency, special attention should be given to the following:

1. Adjust the weights on the levers to give the maximum dryness of sheet commensurate with the quality of sheet.

2. The suction box should be set to permit a slight vacuum leak on the outgoing side of the nip. This increases the water removal and also conditions the wire face.

3. The shower should be of fresh water at a minimum of 30 pounds at its entrance, and be set at an angle against the direction of rotation.

4. See that top roll is in correct alignment with suction extractor roll. Check this at regular intervals.

5. Grind top roll as required to keep the proper crown. This should be done at regular intervals so as to obtain the maximum life from the rubber cover.

The only part requiring replacement due to operating wear is the wire face, the life of which is from about three to four months. This has recently been improved by a different treatment of the shell surface. To obtain the maximum wire life, it must be put on tight and correctly united, and care taken to see that the wire face is not injured mechanically in handling. Under no conditions should a rope or chain be put over the wire face.

The packing strips and end deckles should be withdrawn from the roll through the port holes every few weeks and the interior of the roll and suction box hosed out. The end deckles should be run in and out at every wash up period, to keep the ways and screws clear of foreign material.

In the average mill, the roll itself should be overhauled at least every six months at which time all parts should be cleaned and carefully examined. The bearing seals should be checked and replaced if necessary, the packing strips freed up and the springs cleaned and repacked with grease.

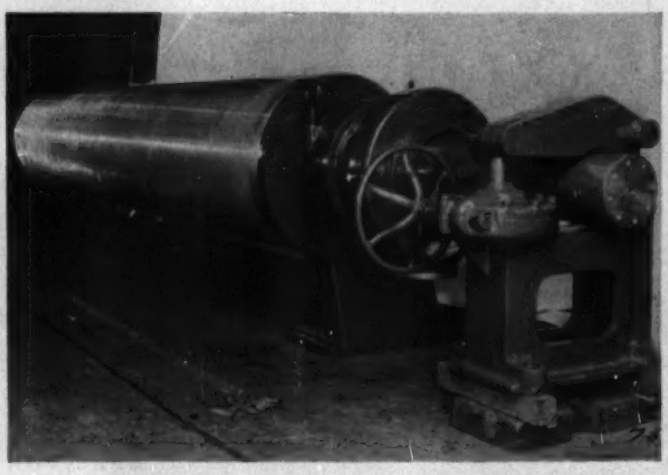

Figure 4—Suction Couch Rear Cantilever Type with Holding Jack

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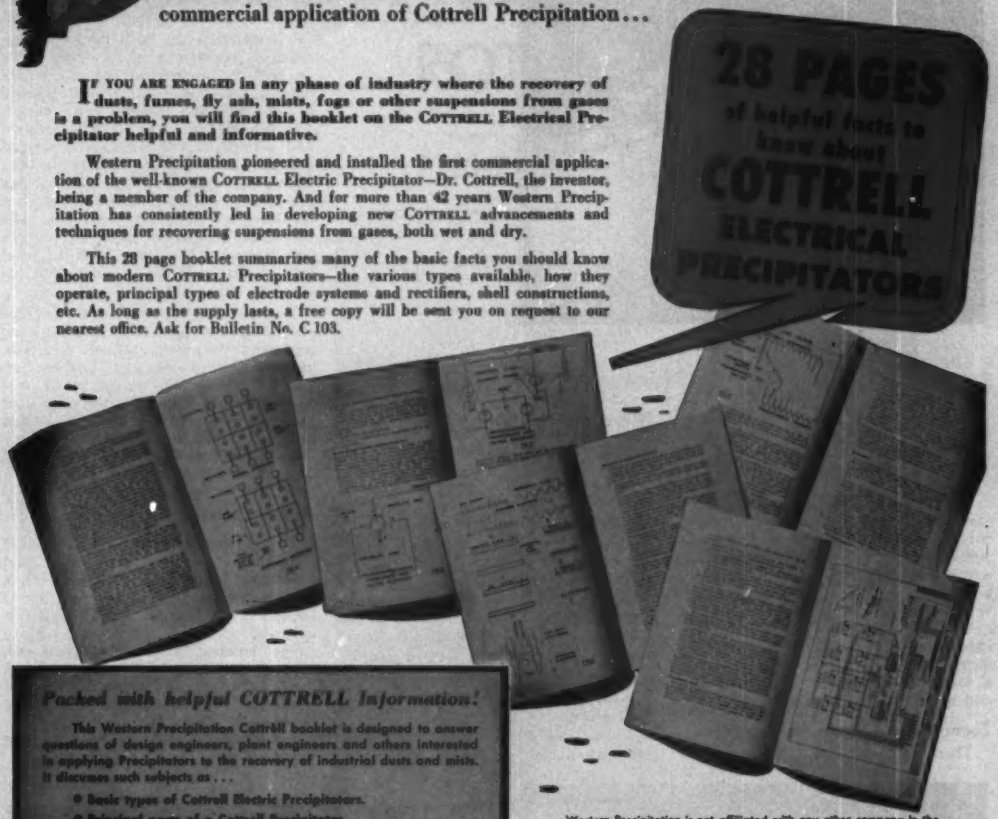
From Western Precipitation—the organization that pioneered the commercial application of Cottrell Precipitation...

IF YOU ARE ENGAGED in any phase of industry where the recovery of dusts, fumes, fly ash, mists, fogs or other suspensions from gases is a problem, you will find this booklet on the COTTRELL Electrical Precipitator helpful and informative.

Western Precipitation pioneered and installed the first commercial application of the well-known COTTRELL Electric Precipitator—Dr. Cottrell, the inventor, being a member of the company. And for more than 42 years Western Precipitation has consistently led in developing new COTTRELL advancements and techniques for recovering suspensions from gases, both wet and dry.

This 28 page booklet summarizes many of the basic facts you should know about modern COTTRELL Precipitators—the various types available, how they operate, principal types of electrode systems and rectifiers, shell constructions, etc. As long as the supply lasts, a free copy will be sent you on request to our nearest office. Ask for Bulletin No. C 103.



Packed with helpful COTTRELL Information!

This Western Precipitation Cottrell booklet is designed to answer questions of design engineers, plant engineers and others interested in applying Precipitators to the recovery of industrial dusts and mists. It discusses such subjects as...

- Basic types of Cottrell Electric Precipitators.
- Principal parts of a Cottrell Precipitator.
- Mechanical and Electronic Rectifiers.
- Various types of Collecting Electrodes (rod curtains, corrugated plates, dual plates, pocket electrodes, etc.).
- Removal of Collected Material.
- Factors in Shell Construction (steel, concrete, brick, etc.).
- Operating Efficiencies and the Effect of Various Factors on Performance.

...and many other basic Cottrell facts. Write for your free copy of Bulletin C103 today while supplies are adequate!

Western Precipitation is not affiliated with any other company in the field of electrical precipitation except its wholly owned subsidiaries, International Precipitation Corporation and the Precipitation Company of Canada, Ltd. Whether you are now contemplating the installation of a Cottrell Electrical Precipitator, or may be interested in such an installation at a future date, we can and will serve you in any part of the United States or other countries.

NOW SELLING

COTTRELL Precipitators
MULTICLONE Collectors
TURBULAIRE Spray Dryers

...in all parts of the U. S. A. and foreign countries.

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Precipitation
CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1048 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
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PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

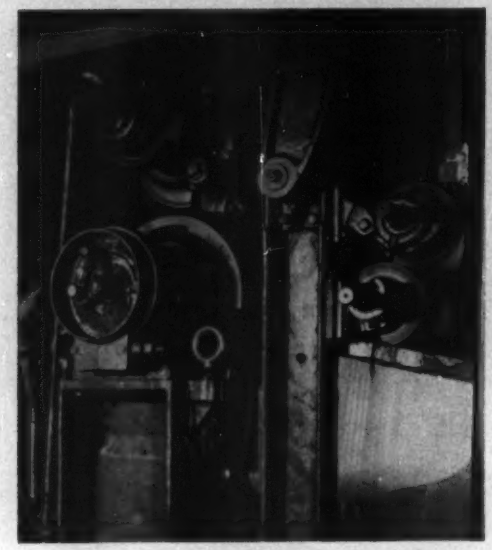

Figure 5—

Suction Drum Press

The following minimum replacement parts should be on hand:

Two or more wire faces
One main bearing
One pair packing strips and end deckles
One set of packing strip and deckle springs

The top roll for the plain extractor and suction extractor rolls is normally covered with 1 inch of 90 plastometer rubber and crowned to suit the machine width and operation. This roll should be ground at regular intervals to prevent excessive wear at the ends, as caused by transient differences in felt speed and by water action. This eliminates the necessity of grinding away a large amount of rubber when the end groove becomes acute.

Suction Couch, Drum and Press Rolls

These rolls are in use on practically all types of fourdrinier and cylinder machines. Although they are used for a wide variety of applications, and their external construction may appear somewhat varied, the basic design, construction and maintenance features are essentially similar. The overall operating efficiency and technique of modern paper machines is such that the loss of any suction roll seriously impairs the production, quality of product, wire life, felt life, operating costs and safety in operation.

For the best and most efficient operation, the following points should be taken into consideration:

1. See that the rolls are in perfect alignment.

2. Keep the nip pressure per lineal inch within the recommended limit.

3. The top arms should be so hung that, when couched, the line of pressure will be approximately through the center of the top roll and suction roll. This prevents pinching or dragging of the rubber covers, and materially reduces the strain on them.

4. Don't try to make the suction press rolls do all the work. Allow the plain presses to take their share up to the economically safe operating capacity.

5. Set the suction box and run the felt line, so the water in the shell holes will not be thrown back into the felt.

To maintain the rolls in proper operating condition, they should be opened up approximately every six months. At this time, all parts should be cleaned and carefully examined. The bearings must be properly cleaned and repacked with the recommended grease. The bearing seals, packing strips, end deckles and packing springs are to be replaced if found to be worn or defective. At this time, the rolls should be ground to keep the surfaces and crowns at their best with the least loss of material, particularly with respect to rubber covered rolls.

The packing strips and end deckles should be removed and cleaned at each week-end shutdown, the suction box and interior of the shell flushed out, and the end deckles moved in and out to insure that all moving parts are kept free and clear. When the end deckles are not moved for long periods, they may not operate freely because of hard deposits of filler, pulp or scale.

Rubber-Covered Rolls

The rubber covered suction press rolls must be given special care and treatment, because the rubber cover is not an integral part of the roll, but is bonded to the bronze shell by mechanical and chemical anchorage. Since rubber bonding to bronze is not as well controlled as to steel and cast iron, due to the inherent characteristics of the bronze metal, the rubber cover may be loosened from the shell under abnormal conditions of pressure and pinching.

Figure 6—Rubber Covered Suction Press Roll

Figure 7—Suction Press

SMIDTH

ROTARY KILNS

For

REBURNING LIME SLUDGE

The illustration above shows a modern, efficient, Smidth Rotary Kiln for reburning lime sludge at the plant of the West Virginia Pulp & Paper Co., Charleston, South Carolina.

F. L. Smidth & Co. are specialists in the design and manufacture of rotary kilns and have furnished numerous installations in many countries for burning lime, lime sludge, dolomite, magnesite, cement, ores, etc.

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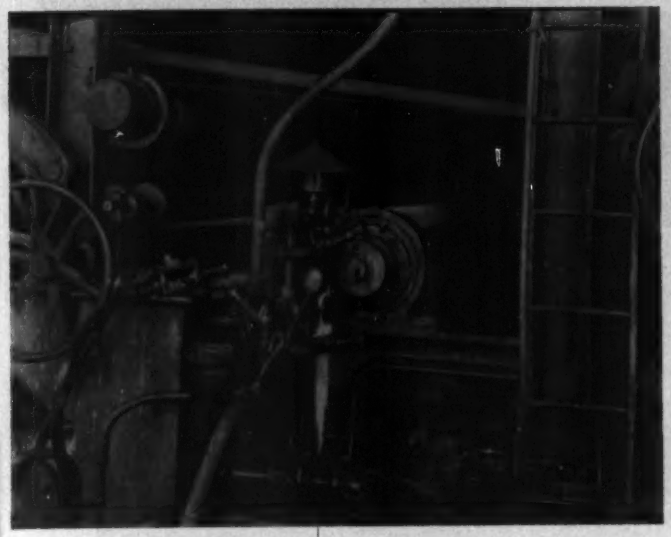


Figure 8—Suction Felt Cleaning Roll

The following points are recommended as essential to the prevention of a rubber cover failure, and to reduce wear to a minimum:

1. The roll should be ground at stated periods, and in this manner only the minimum amount of rubber will be removed; for, if a roll is neglected too long, the surface erosion due to water, material and felt action is greatly accelerated and an excessive amount of rubber has to be ground away in order to obtain the required surface and crown. However, it is not desirable to grind cupped holes to a square edge; as this will waste rubber unnecessarily.

2. Set the top roll so that the effective nip pressure is along the radii of the suction roll to prevent pinching of rubber.

3. Do not carry the nip pressure any higher than required for efficient operation of all the other press parts. In other words, do not unnecessarily overload the rubber cover.

4. Wherever possible it is recommended that the felts be washed outside of the machine. Roping a felt through a rubber covered suction press puts severe strains on short sections of the rubber cover.

Where it is found that operating conditions make it necessary to rope the felt on the machine, the following procedure should be adopted:

(a) Reduce the speed of the machine to a reasonable roping speed, which may vary from 200 to 400 FPM.

(b) Remove all weights, levers and rods from the top roll of the suction press. This will leave the top roll entirely free to move up and down.

(c) Do not bunch the roped felt, but keep it as wide and flat as possible in the nip of the suction press. This will spread the strain over a wider rubber area and reduce it to a more reasonable value per inch of nip.

(d) The use of warm water and a good grade of wood soap has been found very effective for washing the felt and easing up on the suction roll.

5. Keep oil and petroleum products away from the rubber cover, and wipe up all excess bearing lubricant.

The following list of replacement parts is the minimum that should be kept on hand.

One main bearing
One internal bearing
One set of packing strips
One set of end deckles
One set of packing strip and deckle supporting springs
One set of bearing seal rings

Suction Felt Rolls

Suction felt rolls have found many useful and unique applications on paper machines, and have materially reduced felt costs in most instances. Hence, their loss from the machine increases the operating costs by penalizing the felt—both in life and condition.

These rolls are similar in construction to the larger bronze suction rolls, except that they are smaller in diameter and not driven. To obtain the maximum operating advantages from these rolls, experience indicates the following:

1. Each suction felt roll must have its own individual vacuum pump of ample capacity.

2. A proper separator chamber and water leg must be provided. If the vacuum pump handles all the water its capacity is greatly reduced.

3. The suction box must be set so the trailing packing strip is at the point where the felt leaves the roll. This prevents water retained in the holes from being thrown back into the felt.

4. The felt should wrap the suction felt roll approximately 90 degrees for proper drive traction and to prevent the felt from slipping over the roll surface.

5. The packing strips should be so set against the shell that the roll can be easily turned by hand. Setting the strips tightly against the shell does not help increase the vacuum; but only increases the friction drag on the driving load on the felt.

6. The rolls should be opened up, cleaned and examined every six months. The end deckles should be moved in and out at every wash-up, to keep them free and in operating condition.

The construction of these rolls is very rugged and they generally operate for years without requiring any repairs or replacements. However, the following list of spare parts is recommended as the minimum to have on hand:

One bearing
One set of packing strips
One set of end deckles
One set of packing strip and end deckle springs

Lubrication

Too much emphasis cannot be placed upon the importance of adequate and proper lubrication of the equipment under discussion. Experience has proved that where mill maintenance has done a thorough job of proper lubrication, the cost for repairs and lost time has been materially reduced.

There are recent publications available covering the subject of lubrication in a clear concise manner and offering numerous helpful suggestions and instructions which should be useful to any mill maintenance organization. Copies of these bulletins will be forwarded to any interested parties upon request.

CONTAINER FIRM EXPANDS

The Lockport Paper Products, Inc., has purchased the former Lockport public market building, Lockport, N. Y. The building will be leased to the Western New York Containers Corp., Lockport, for use in expanding its operations. The Western New York Containers Corp. was organized four years ago for the manufacture of paper boxes and employs 100 persons.

FIGHTING PAPER WANTED

Invitation to Bid has been issued by the New York Quartermaster Procurement Agency, 111 East 16th street, New York 3, N. Y., on QM-30-280-52-81, covering towel, paper, single fold, 250 sheets per pkg., 4,760,000 pkg. Bids will be opened September 11, 1951 at 11:00 A.M. (EDST) at the New York Office. This procurement is for the U.S. Army.

NO. 3 MACHINE
at
Hammermill Paper Co.
Erie, Pa.

Again . . . it's
INLET AND HEADBOX
by
VALLEY

CALIPER
FORMATION
LEVEL SHEET
HIGHER TEST
INCREASED SPEED

Send us your inquiry regarding
improving your inlet and headbox equipment

VALLEY IRON WORKS CO., Appleton, Wisconsin

PRICES

The prices below reflect market quotations in New York at the mill level on standard grades. Does not include spot offerings.

PAPER AND BOARD

Standard News, Delivered Ports

Rolls, contract, per ton	$105.00/116.00
Sheets	110.00/ —

F.o.b. Mills, C.l. Frt. allowed, dock, N. Y.

Kraft— per cwt., 40# base wgt.

Standard Wrapping Rolls	$7.75/ —
No. 1 Wrapping Rolls	8.25/ 8.50
Standard Bag	7.50/ —

Tissue— per ream 24x36 (480) 10 lbs. 2500 lbs or more

Wh. No. 1 Frd.	$1.95	/$2.25
Wh. No. 1 MG	2.10	/ 2.40
Wh. No. 1½	1.85	/ 2.15
Wh. No. 2	1.85	/ 2.15
Kraft Anti-Tar 20x30	1.85	/ 2.15
White Anti-Tar 20x30	1.95	/ —

Toilet— per case or 100 rolls—1 M sheets

Unbleached 4½x4½	$8.00/$8.25
Unbleached 4½x5	6.60/ —
Bleached 4½x4½	10.00/12.50
Bleached 4½x5	9.85/ —
Per Case of 50 rolls—2000 sheets	
Unbleached 4½x4½	$8.00/$9.75
Bleached 4½x4½	6.95/ —
Per Case of 100 rolls—1000 sheets	
Facial, 4½x5, 2-ply	$8.95/10.65

Paper Towels— per case of 3750

Wh. Jr. M'ff'd 9¼x9¼	$5.75
Br. Sr. M'ff'd 9¼x12	4.10
Br. Jr. M'ff'd 9¼x9¼	3.60
Br. Jr Sgl. fold 9¼x10¾	3.65
Bleached 7¾x11, 24/25 rolls	$7.00/7.55

Manila, per cwt.

No. 1 Jute Tag, 100-lb., sheets*	$20.55/22.55
Reg. Jute M.F. 40-lb., sheets*	19.50/21.50
Wrapping Manila	8.75/10.50
Printing Manila	10.50/12.00

* Less usual allowance for rolls.

Gummed Tape— per bdl., 500 bdls. or more

90-lb. 375 ft. GSI	$7.20	/ —
60-lb. 600 ft. GSI	7.20	/ —
35-lb. 800 ft. GSI	8.28	/ —
35-lb. 500 ft. GSO	6.21	/ —

MARKET WOOD PULP

Third Quarter Contract Prices, Per Short Air-Dry Ton

	Varying freight allowances		On Dock Atlantic Ports		
	*U. S.	Canadian	*Swedish	*Finnish	*Norwegian
Groundwood	$92.50/ —	‡95.00/100.00			
Sulfate, Bleached	145.00/ —	190.00/200.00	$230.00/ —	$230.00/ —	$230.00/ —
Semi-bleached Sulfate	140.00/ —				
Sulfate, Unbl.	132.50/ —	145.00/175.00	200.00/ —	200.00/ —	
Sulfite, Bichd.	140.00/ —	160.00/175.00	225.00/ —	225.00/ —	225.00/ —
Sulfite, Unbichd.	132.50/ —	150.00/160.00	200.00/ —	200.00/ —	
Sulfite, Unbl'd (Glassine)		164.00/ —			
Soda, Bichd.	140.00/ —	155.00/160.00			
Sulfite Screenings	72.50/ —				
Sulfate Screenings	67.50/ —				
Groundwood Screenings	60.00/ —				
Unbichd Sulfate Sideruns	132.50/ —				
Stand. News. Sideruns	92.50/ —	106.00 —			

* OPS Ceiling, CPR 49 ‡ F.o.b. Shipping Point.

Boards, per ton—

Filled News	$107.50/ —
Plain Chip	105.00/107.50
Bichd. Mix. L-d. Chip	147.50/ —
White Pas. coated .020	170.00/ —
Kraft Liners 42 lb.	115.00/117.50
Kraft Corr. .009	122.50/126.00
Binders Boards	137.50/140.00

The following prices are representative distributors' resale prices.

Rag Content Bonds and Ledgers— White, 20 lb.

Bonds	4 Cms.
	per cwt.
100% Rag Ex. No. 1	$70.45/$75.90
100% Rag	62.65/ —
75% Rag	48.15/ —
50% Rag	38.90/ —
25% Rag	31.65/ 33.00

Ledgers	4 Cms.
	per cwt
100% Rag Ex. No. 1	$72.65/$72.80
100% Rag	63.90/ —
75% Rag	49.40/ —
50% Rag	40.20/ —
25% Rag	33.00/ 34.30

Sulphite Bonds and Ledgers White, 20 lb.

Bonds	4 Cms.
	per cwt.
Watermarked	$19.00/$20.50
Plain	18.40/ 19.50

Ledgers	4 Cms.
	per cwt.
Watermarked	$20.30/$21.80
Plain	19.35/ 20.80

White Book

Conversion Coated	Case
	per cwt.
No. 1	$23.90/$24.65
No. 2	22.15/ 23.40
No. 3	21.90/ 22.40
Machine Coated	
No. 1	$18.40/$18.90
No. 2	16.65/ —
Uncoated	
No. 1 Antique (Watermarked)	$19.15/$19.65
Offset	17.40/ 19.90
A Grade E. F.	18.15/ 19.90
A Grade S. C.	18.65/ 19.40
B Grade E. F.	18.40/ —
B Grade S. C.	17.40/ 19.15

‡ Indicates a price change.

WASTE PAPER MARKET

The following quotations were gathered from major dealers in each market. They are an indication of the price range in which volume tonnage was moving on the date specified. Prices to mills, per ton, f.o.b. cars shipping point (includes brokers' fee.)

	New York	Philadelphia	Boston	Chicago
	Aug. 16	Aug. 6	Aug. 10	Aug. 15
No. 1 Mixed Paper	$17.00/ 19.00	$16.00/ —	$17.00/ —	$18.00/ —
Boxboard Cuts	20.00/ 25.00	16.00/ —	23.00/ —	23.00/ —
Mill Wrappers	20.00/ 30.00	22.00/ 24.00	20.00/ —	22.00/ —
No. 1 News	19.00/ 21.00	18.00/ —	— /19.00	18.00/ —
Over-issue News	28.00/ 35.00	25.00/ 27.00	22.00/ 24.00	23.00/ —
Corrugated Containers	37.00/ 39.00	36.00/ —	36.50/ 38.00	40.00/ —
New Corrugated Cuts	Nominal	38.00/ —	45.00/ 55.00	62.00/ —
Double Kraft Ld. Corr. Cuts	115.00/120.00	105.00/120.00	100.00/110.00	120.00/ —
100% Kraft Corr. Cuts	140.00/165.00	125.00/135.00	120.00/140.00	140.00/ —
Used Kraft Bags	85.00/105.00	80.00/ 85.00	75.00/106.50	60.00/ —
No. 1 Brown Kraft Paper	70.00/ 75.00	90.00/ 95.00	80.00/100.00	60.00/ —
Super Resorted Br. Kraft	100.00/105.00	100.00/105.00	90.00/115.00	90.00/ —
New Br. Kraft Env. Cuts	160.00/180.00	150.00/ —	150.00/170.00	150.00/ —
New Br. Kraft Cuts	150.00/175.00	130.00/140.00	140.00/170.00	140.00/ —
No. 1 Glsd Shvs.	65.00/ 70.00	50.00/ 55.00	65.00/ 75.00	45.00/ —
White New-blanks	90.00/ —	70.00/ —	80.00/ 90.00	70.00/ —
No. 1 Flyleaf Shvs.	80.00/ 90.00	70.00/ —	85.00/100.00	100.00/ —
No. 1 Soft Wht. Shvs.	150.00/170.00	165.00/ —	165.00/185.00	175.00/ —
Super Soft Wht. Shvs.	190.00/200.00	175.00/ —	180.00/200.00	185.00/ —
Hd. Wht. Shvs.	185.00/200.00	190.00/215.00	180.00/205.00	180.00/ —
Hd. Wht. Env. Cuts	200.00/245.00	200.00/225.00	190.00/225.00	190.00/ —
New Manila Env. Cuts	140.00/150.00	160.00/165.00	130.00/155.00	160.00/ —
Col. Tab Cards	110.00/120.00	100.00/ —	85.00/140.00	100.00/ —
Manila Tab Cards	170.00/210.00	160.00/ —	160.00/190.00	165.00/ —
No. 1 Mixed Ledger	95.00/110.00	90.00/100.00	77.00/100.00	100.00/ —
White Ledger	130.00/135.00	125.00/130.00	115.00/130.00	125.00/ —
No. 1 Book & Mag.†	41.00/ 45.00	35.00/ 45.00	30.00/ 50.00	22.00/ —
No. 1 Rep'd. Hvy. Books‡	50.00/ 55.00	43.00/ 50.00	50.00/ 65.00	45.00/ —

† Includes Time & Life; no coarse groundwood. ‡ Not to exceed 10% groundwood.

RAG MARKET

New Domestic Cotton Cuttings
OPS Ceiling Price, CPR 28
Delivered Mill Basis

Add 7½% Dealer Commission

No. 1 White Shirts	$21.00
No. 1 Unbichd. Muslins	21.00
Bichd. & Unbichd. Underwears	21.00
Bichd. Canton Flannels	21.00
No. 1 Light Silesias	16.00
No. 1 Light Prints	11.50
No. 1 Blue Overalls	14.50
Suntan Khakis	11.50

Add 10% Dealer Commission

Fancy Shirts	$10.00
Indigo Blues	10.00
Mixed Khakis	8.00
Corduroys	8.00
Cottonades	8.00
No. 1 Washables	6.50

Old Domestic Cotton Rags
(Prices to Dealers, f.o.b. Ship. Pt.)

	Per 100 lbs.
Mixed White	$5.00/$5.50
Cotton Pants & Overalls	4.25/ 5.00
Thirds and Blues, Repacked	4.00/ 4.25
No. 1 Roofing Rags	1.90/ 2.00
No. 2 Roofing Rags	1.60/ 1.70
No. 3 & 4 Roofing Rags	1.50/ 1.60

Bagging
(Prices to Dealers, f.o.b. N. Y.)

	Per 100 lbs.
Foreign Gunny	$5.00/$5.50
Domestic Gunny, No. 1	5.00/ 5.50
Heavy Wool Tares	5.50/ 6.00
Foreign Manila Rope	8.50/ 8.75
Domestic Manila Rope	9.00/ 9.25
Jute Strings	6.00/ 6.50
No. 1 Sisal Strings	8.00/ 8.25
Paper Mill Tares	4.25/ 4.50
Foreign Scrap Burlap	4.25/ 4.50
Domestic Scrap Burlap	4.75/ 5.50
Austr. Wool Pouches	7.00/ 8.50
New Burlap Cuttings	7.00/ 7.50

MATERIALS

Aluminum sulfate:
- comml. bags, wks. ..... cwt. 1.65
- iron-free c.l. 3.25

Alcohol, ethyl:
- tax free, dms. c.l. ..... gal. 1.01 / 1.05½
- deld. East Miss.

Alcohol, methyl:
- Synthetic, Zone 1, dms.
- c.l. fir. alld. ..... gal. .54

Casein, acid proc.:
- dom. sh. pt. c.l. ..... lb. .36½/ .41½
- imp. ex. dock ..... lb. .29½/ .39

Caustic soda:
- c.l. wks. solid, 76%, cwt. 3.35
- flak. & grd. 100-lb. drums... 3.75
- liquid 50% tanks.... 2.55
- liquid 70% tanks.... 2.65

China clay:
- dom. air-float. filler, c.l. wks. ton 10.00
- water-washed, lump, filler.... 11.00
- coating ..... 17.60 /30.50
- imported, ex whse...short ton 15.20 /28.35

Chlorine:
- single-unit tanks, works..cwt. 2.70
- multi-unit ..... cwt. 3.25 / 4.40

Formaldehyde:
- USP, inh. dms, c.l. wks....lb. .0625/ .0675
- t.c.l., E. wks. ..... .0675/ .0725

Fuel oil:
- Bunker C, No. 6 Cal. hvy tanks, refinery ..... bbl. 1.95 / 2.15
- light ..... bbl. 2.00 / 2.25

Hydrogen peroxide:
- USP, 35% chys. E. of Miss.

Lime: lb. .23½/ .26½
- hydrated, bags, wks. .....ton 13.50

Rosin:
- B gum, drms, c.l. Savan..cwt. 7.00 / 9.00*
- G, H, I, K ..... cwt. 8.35 / 9.40*
- FF, wood, do. ..... cwt. 6.50 / 7.30
- * OPS Ceiling, CPR 52.

Rosin size:
- 70%, gum A pale grds, tank cars, south, sh. pt. ....cwt. 7.00 / 7.10

Salt cake:
- dom. bulk, c.l. wks. ..... ton 17.00
- wks. frt. all. ..... ton 20.00 /23.00

Soda ash:
- light, 58%, bags, wks. 1.30
- bulk 1.20

Sodium silicate 40°:
- turbid. c.l. wks. ..... cwt. 1.30 /
- t.c.l. wks. ..... 1.60 / 1.85

Sodium peroxide:
- dms. c.l. E. of Miss. ..... lb. .21
- t.c.l. do. ..... lb. .21½/ .22

Soybean, protein:
- chem. isol, wks. c.l. ..... lb. .24 / .28
- Chem and Chic.

Sulfuric acid.
- 60° Be. chys. cl. wks.... cwt. 1.75 / —
- t.c.l. wks. ..... cwt. 2.05 / 2.85

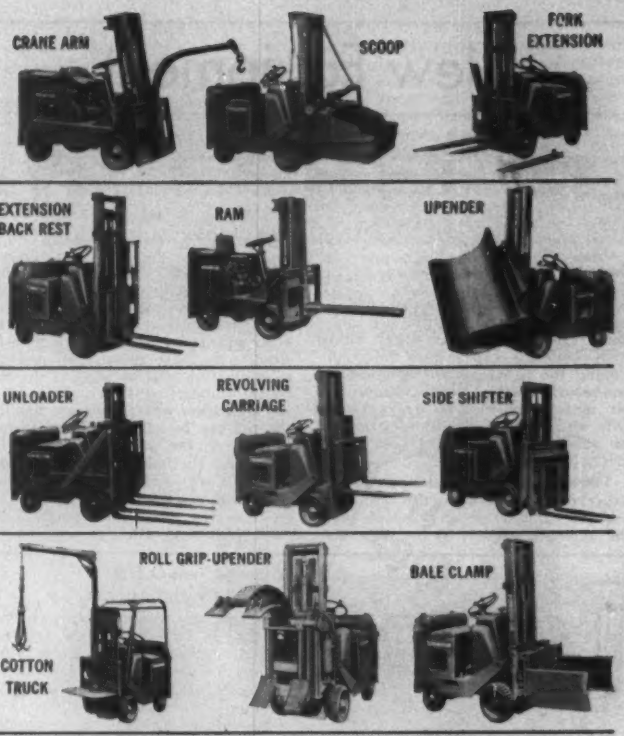
Sulfur:
- crude, c.l. mines, contract, long ton 21.00 /22.00
- f.o.b vessels Gulf ..... 22.50 /23.50

Sulfur dioxide:
- liquid, comml. cyl. wks. ..... lb. .09
- multi-unit cars ..... lb. .0535

Starches:
- pearl corn. bags, c.l. wks...cwt. 6.02 / —
- white dextrines, c.l. wks...cwt. 7.41 / —
- potato, Idaho, c.l. wks... cwt. 5.50 / —
- potato, Maine, c.l. wks....cwt. 5.75 / 6.00
- tapioca, conv. dextrines...cwt. 7.75 / 8.50
- low, Siam, on dock N.Y..... 5.50 / 5.75 nominal

Talc:
- domestic, 50-lb. sacks, c.l. wks. ..... ton 25.00 /30.00

Titanium dioxide:
- anatase, c.l. orld., bags....lb. .21 / .21½
- t.c.l. deld. ..... lb. .22 / .22½
- rutile, c.l. deld. ..... lb. .23 / .23½
- t.c.l. deld. ..... lb. .24 / .24½



Regardless of Your Material Handling Problem

WE'LL BET ONE OF THESE TOWMOTOR ACCESSORIES CAN HELP SOLVE IT!*

*IF NOT— TOWMOTOR SPECIAL ENGINEERING WILL DEVELOP THE ANSWER!

HANDLES ANY TYPE MATERIAL

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Send to Towmotor Corporation, Div. 17, 1226 E. 152nd St., Cleveland 10, Ohio, for free folders describing the 14 Standard Towmotor Accessories, and Towmotor's Special Engineering devices.

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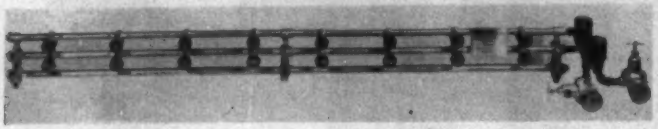
New Equipment



Twin Jet Moisturizer

Twin Jet moisturizer is a unique development in paper conditioning equipment. Water alone, or water mixed with chemicals, can be used for conditioning the paper, or for conditioning and securing better finishes. Compressed air is not required in its operation. Oils and various emulsions also can be handled efficiently by this equipment, it is said.

The unit is designed for use on the paper machine between the last dryer and the calendar rolls, at which point the moisture content of the paper can be brought up. Primarily developed by a paper engineer for use on newsprint stock and other heavy grades of paper, it also is very efficient on many other grades of paper where it is desired to increase the overall moisture content. Can also be used at the reel, on the winder, or slitter. In fact,, in any operation where rolls are handled, the roll can be loaded with uniformity of control, the producer claims. Designed for the individual machine, it is built in any size and to meet any operating condition. Write to Vapo Systems Co., Inc., 1931 South Tenth Ave., Maywood, Ill.

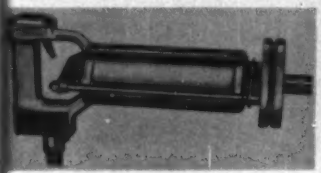
Magnetic Slurry Cleaning Drum

Because of its self-cleaning ability, the magnetic slurry cleaning drum is said to be especially valuable in tramp iron protection. The unit consists of a revolving smooth-faced cylindrical shell within which there is a stationary, high-powered permanent magnet. The magnet pulls the tramp iron out of slurry, then completes the purging operation by sliding the trash into a collecting tray.

A complementary protective device is an electronic metal detector. This detector is particularly suited to protection of chippers; if logs travel on belt conveyors to the chippers, tramp metal of any kind is spotted. Made by Eriez Manufacturing Co., Erie, Pa.

High Capacity Mixer

A new high capacity mixer in capacities from 400 to 1200 gallons features specially designed agitators, also scrapers for cleaning the material being mixed from the sides and bottom of the tank. Made by Lloyd Engineering Co., 59 Stephen St., Belleville, N.J.



Electric Hammer Drill

A new Electromagnetic Hammer Drill (Model No. 17-RO) for high-speed hole drilling in concrete, brick and stone is announced. Unit has a 1⅛" drilling capacity, weights 21½ pounds, and is available for operation from 110 volt a.c. or 220 volt a.c. Automatic rotation of the carbide-tipped, spiral-fluted drill, is said to speed up hole drilling, eliminate manual turning of the drill chuck, and reduce fatigue. This automatic rotation of the drill bit is accomplished by a rubber ratchet mechanism actuated by the recoil of each blow of the hammer's piston, 3600 blows per minute. Manufactured by the Syntron Co., 587 Lexington Ave., Homer City, Pa.

Steel Strap Cutter

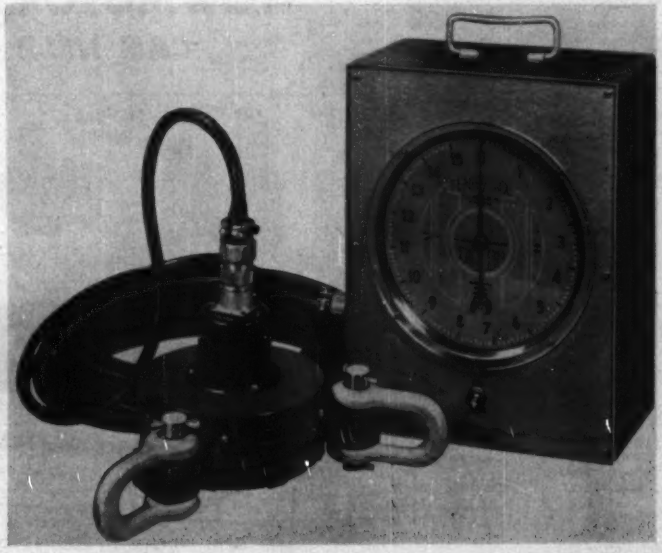
A lightweight tool designed to cut flat steel strapping up to ¾" x .035" with minimum effort is announced as E14AO Strap Cutter. Features a band guide designed to prevent straps from wedging sidewise between the blades, and a flat lower blade to permit easy insertion beneath tensioned straps on bales, bundles and cartons. Frame and blade are constructed from forged steel. Narrow span handles are curved to fit the grip of the operator. Measuring 9½" long, the tool weighs one pound. Write to Dept. 30P, Acme Steel Co., 2840 Archer Ave., Chicago, Ill.

Improved Tens-O-Trol

Tens-O-Trol was designed for the basic purpose of measuring tension, weight, or tractive loads remotely. Electro-mechanical in design it is now equipped with oversize selsyn motors for added torque and increased dependability.

Equipment consists of a standard traction Dynamometer to which is mounted a ball bearing type selsyn motor. Movement of calibrated Dynamometer beam is transmitted to shaft of selsyn motor transforming mechanical energy to electrical.

Dynamometer is connected by means of a heavy rubber covered cable to a repeater motor housed in a metal cabinet. An external 12-v. battery supplies the necessary current. When a switch is thrown on the front of the cabinet, the system becomes operative. Loads imposed on the Dynamometer transmitter are instantly read on the repeater station at distances up to 400 feet away. Either one or two repeater stations may be used with each transmitter Dynamometer as desired. Distance between each repeater can be varied to suit the job requirements. Write to W. C. Dillon & Co., Inc., 1421 South Circle Ave., Forest Park, Chicago, Ill.



Spent-Clay Conveyor

Engineers at an oil company refinery solved a materials handling problem by using an SK Hopper Type Eductor mounted on a movable platform to convey spent clay from filter shells to a settling basin outside the building. Hopper is located above and the eductor below the platform. A movable secondary drum, or hopper, is rolled under the man-head of the filter shell to receive the spent clay. A gate in the secondary hopper is regulated to permit the proper amount of clay to feed into the eductor hopper.

Pressure water, by-passed from the inlet line on the eductor, issues through the wash down nozzles in the eductor hopper and washes the clay down into the eductor chamber. Then pressure water, which issues through the nozzle of the eductor, entrains the clay and discharges through the flexible hose with sufficient force to carry the clay-water slurry to the settling basin. Request Bulletin 2-M. Schutte and Koerting Co., Cornwells Heights, Bucks County, Pa.

G-E Beta-Ray Gage Checks Weight Deviations

In the first installation of its kind, a General Electric beta-ray gage is being used to help maintain accurate and uniform weight of milk carton paperboard.

The gage, mounted on a 136-inch paperboard machine, records the varying amounts of beta-rays absorbed by the board as it passes through the gage head of the non-contacting device. The amount of beta-rays absorbed varies with the weight of the board, thus allowing a constant check to be maintained. Variations as slight as one percent from the desired weight per unit area of the board are automatically indicated and recorded.

Alongside the control and indicator panel is a strip recorder, which continuously and automatically makes permanent records of variations in weight as board passes through the non-contacting gage head located at far right.

Operators are able to make adjustments of the processing machinery as needed to produce paperboard of uniform weight.

Write to Apparatus News Bureau, General Electric Co., Schenectady 5, N. Y.

Air Pollution Autometer

The Thomas Autometer—for fully automatic analysis and recording of air pollution by SO_2—is now available as either an integrating or non-integrating assembly, with Speedomax electronic recorder. Employing a thoroughly tested and proved principle, the integrating Autometer continuously records actual concentration of sulfur dioxide in parts per million, records average concentration integrated over a half-hour period, automatically checks its "zero reading" every thirty minutes, and marks off each cubic foot of air sampled. The non-integrating assembly is of simpler design, providing only the continuous record of SO_2 concentration for applications where this information is sufficient. The Autometer makes use of electrolytic conductivity as a means of measurement. A continuous sample of air is passed through a solution which absorbs SO_2, causing a change in the

Jones

ACCEPTANCE

Since the PULP-MASTER was put on the market, four years ago, 142 units have been sold to leading mills in the United States, Canada and abroad.

More important to you is the record the PULP-MASTER has set — in a wide variety of applications — for high quality production, reduced beating cycles, efficient use of power and low maintenance costs.

Ask your Jones representative for complete details, or write for Bulletin 1019B.

Jones PULP-MASTER

E. D. Jones and Sons Company, Pittsfield, Mass.

BUILDERS OF QUALITY STOCK PREPARATION MACHINERY

electrolytic conductivity of the solution. Range of the equipment—0 to 5 parts SO_2 per million—covers the concentrations which are of interest in pollution surveys. Changes in concentration as small as a few tenths of a part per million can be readily detected, it is stated.

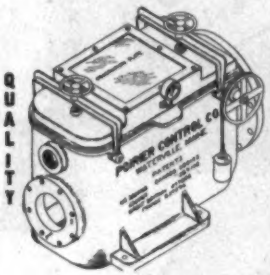
Write to Leeds & Northrup Co., 4934 Stenton Ave., Philadelphia 44, Pa.

Telescopic Conveyor With Rollers

A new roller type Wilkie Conveyor supplements the skate wheel type. Developed especially for conveying bundles and other objects not having a rigid, flat bottom, the roller type also carries a heavier load and also is telescopic—easily "pulled-out" or "pushed-in" to follow the load for quick pick-up and delivery. Mounted on heavy casters, the unit is quickly and easily rolled from one job to another. Adjustable break-lock holds conveyor securely in position. The roller type is supplied in 12- and 18-inch widths. Nine different lengths are available which extend to a maximum of 30 feet. Write to The Wilkie Co., 5520 Arch St., Philadelphia 39, Pa.

IT'S THE POIRIER SYPHON SYSTEM

QUALITY



PRODUCTION

DEPENDABILITY

FOR FULL INFORMATION WRITE

POIRIER CONTROL CO.

WATERVILLE, MAINE

NEW LITERATURE

American Paper & Pulp Assn., 122 East 42nd St., New York 17, N. Y. Book, "The Dictionary of Paper." Second edition. 393 pp. Price $6.50. Prepared for the APPA by a specially appointed industry committee working in conjunction with The Institute of Paper Chemistry. Purports to give the industry a thoroughly modern and more complete dictionary of the names, terms, and expressions which it uses. Includes pulps, boards, paper properties and related papermaking terms.

Babcock & Wilcox Tube Co., Beaver Falls, Pa. Bulletin, B & W Steel Tubing Seamless or Welded Stainless, Alloy, Carbon Steels." TA 1559. Includes analyses and tables of physical and mechanical properties as well as application data for 20 popular carbon, alloy and stainless tubing steels. Available gratis.

Baker-Rauling Co., Cleveland, Ohio. Booklet, "Care and Maintenance of Industrial Trucks." 16 pp. Illus.

Superintendent of Documents., U. S. Gov. Printing Office, Wash. 25, D. C. Book, "Midyear Economic Report of the President Transmitted to the Congress." 278 pp. Price 65c. Also includes a report "Economic Situation at Midyear 1951" by the President's Council of Economic Advisers.

Elgin Softener Corp., Elgin, Ill. Bulletin 512, "Elgin Ultra Deionizer Monoflo Design." Technical and sales copy.

Freeport Sulphur Co., Freeport, Texas. Booklet, "4,000 Years of Yellow Magic; the Story of Sulphur." Tells the role sulphur plays in the agricultural, industrial and scientific progress of the world.

Leeds & Northrup Co., 4907 Stenton Ave., Philadelphia 44, Pa. Bulletin, "Air Pollution by SO_2 Recorded by Thomas Autometer." Technical copy, illustrated with cuts and schematic drawings.

Morse Chain Co., 7601 Central Ave., Detroit 8, Mich. Catalog, "No. C 55-50." Details available sizes of stock sprockets and roller chains. Includes data on drive selection, service factors, installation, and service.

Oilgear Co., 1560 W. Pierce St., Milwaukee 4, Wis. Bulletin, "Oilgear HG Axial Piston Constant Delivery Pumps." No. 46601. Technical copy. Illustrated.

Plibrico Jointless Firebrick Co., 1800 Kingsbury St., Chicago 14, Ill. Catalog, "Incinerators for all Kinds of Industrial and Institutional Refuse." Multi-Rib Casing, Monolithic Linings. Standard Rubbish Destructor, etc.

Harry W. Smith, Inc., 507 Fifth Ave., New York 17, N. Y. Handbook, "Mineral Wool Insulation Specifications and Standards." A guide to buyers, engineers, plant superintendents, specifications writers and contractors in meeting materials and application standards on government contracts.

Stephens-Adamson Mfg. Co., Aurora, Ill. Bulletin, "Spring-Type Conveyor Belt Cleaner." No. 651. Technical copy. Illustrated.

"EXCELSIOR" FELTS

The Trademark of Felts of Superior Quality for Every Grade of Pulp and Paper

KNOX WOOLEN COMPANY

CAMDEN, MAINE

Tax Foundation, Inc., 30 Rockefeller Plaza, New York 20, N. Y. Bulletin, "Tax Review."

Trees for Tomorrow, Inc., Merrill, Wis. Booklet, "Trees for Tomorrow." Sums up six years of experience in a new approach to conservation education in Wisconsin.

Tri-Clover Machine Co., Kenosha, Wis. Bulletin No. 1151. Features the new all-sanitary magnetic full-flow trap.

United Laboratories, Inc., Cleveland, Ohio. Brochure, "Plastic Rock Service Flooring for Industry Institutions and Other Purposes." Technical copy. Illustrated. Available gratis.

U.S. Dept. of Agriculture., Forest Service S.E. Forest Experiment Sta., Asheville, N.C. Bulletin, "Farm Woodland Management at the Bent Creek Experimental Forest." Report for the years 1946-1949, inclusive.

National Production Authority, U.S. Dept. of Commerce, Washington 25, D. C. Booklet, "Containers and Packaging Industry Report." Summer 1951, outlines Controlled Materials Plan. Discusses action NPA has taken to conserve consumption of critical materials, and reports first quarter industry conditions and statistics.

Warren Steam Pump Co., Inc., Warren, Mass. Bulletin, "New Warren-Quimby Process and Medium Duty Chemical Service Pump," WQ-213. Technical copy. Also, Bulletin WQ-220, "New Warren-Quimby Centrifugal Sump Pump. Technical copy.

Westinghouse Electric Corp., Box 2099, Pittsburgh 30, Pa. Booklet, "Electrical Measuring Instruments." Explains how to select these instruments; also, lists types available. Illustrated.

SUPPLIERS

F. C. HUYCK & SONS (Kenwood Mills) will acquire the entire capital stock of Gay Brothers Co., Cavendish, Vt., subject to stockholders' approval.

Acquisition of the Gay Brothers mill will give Kenwood Mills additional capacity needed to meet the demand for Kenwood blankets and other fabrics, and to fill existing and anticipated military orders, without limiting the company's ability to take care of the demand for woven felts and mechanical cloth.

Gay Brothers has been active in the manufacture of a wide variety of woolen cloths since its establishment in 1869. The present Gay Brothers manufacturing facilities consist of more than 80,000 square feet of modern manufacturing space, equipped with new and modern textile machinery.

MANHATTAN RUBBER DIVISION of Raybestos-Manhattan, Inc., has appointed Austin L. Hawk as assistant manager of the Western Sales District. Mr. Hawk is located at the Western Sales District offices at 445 Lake Shore Drive, Chicago, where for many years he has served in various capacities. At the same time, S. V. V. Hoffman was appointed regional manager of Raybestos-Manhattan's West Coast Sales Division for Southern California, with headquarters at 4651 Pacific Boulevard, Los Angeles, Calif.

REICHHOLD CHEMICALS' plan to centralize their executive offices in New York City recently resulted in P. L. Swisher, vice-president in charge of sales and advertising, and his staff, moving from Detroit to New York, and will begin functioning from the company's new offices in the International Building, Rockefeller Center, August 27.

ALLIS-CHALMERS has named H. Stanley Bimpson to the office of the director of engineering of its general machinery division as consulting engineer.

GENERAL ELECTRIC CO.'s Apparatus Marketing Division, effective September 1, has appointed Edwin H. Howell assistant manager of the East Central district. Headquarters of the district are at Cleveland, Ohio. The district includes most of Ohio, Indiana and Kentucky as well as a few counties in Pennsylvania and Virginia.

AMERICAN CYANAMID CO. has assigned three of its executives to management functions of the Arizona Chemical Co. They are: Dr. R. C. Swain, Cyanamid's vice-president in charge of research who will supervise Arizona's research and process development; E. D. Powers, vice-president in charge of production who will supervise all of Arizona's manufacturing activities, and Dr. D. H. W. Felch, chief engineer, who will direct all engineering activities of the Arizona company. The three men will retain their Cyanamid posts.

The Arizona Chemical Co. owned jointly by Cyanamid and the International Paper Co., converts by-products of International's Southern Kraft Division into crude talloil, refined grades of alphapinene, and beta-pinene. The appointments follow a recent major expansion of Arizona activities to include distillation of the crude talloil into rosin, fatty acids and refined talloil. F. M. Fargo will continue as president of the company, J. F. Fredriksson as vice-president and general manager, and A. Scharwachter will remain in charge of sales.

LIBBEY-OWENS-FORD GLASS CO. has appointed Dr. John B. Davidson as an associate director of research. Dr. Davidson will supervise research problems pertaining to industrial chemicals, silicones, glues and industrial resins.

Protect your investment....
with a SMITH & WINCHESTER
MODEL "E"
UNDERCUT
TRIMMER
YOUR investment in finished stock is large, particularly just before the trimming operation. Rejects and spoiled work resulting from faulty or inaccurate trimming are costly. Protect this investment with Smith & Winchester Model "E" Trimmers designed to meet today's needs for fast production, hairline accuracy and safety. Look into all the new features of the Model "E" Trimmer. Write for Bulletin!
THE SMITH & WINCHESTER Manufacturing Company
SOUTH WINDHAM, CONN.

At Left—Making Experimental Sheet on Noble & Wood Machine at Du Pont's new Paper Laboratory. At Right—Sheet Forming Equipment.

Du Pont's New Paper Laboratory

Du Pont announces the opening of a new paper development laboratory at Deepwater Point, N. J. This laboratory will be devoted to the development of neoprene latex-paper combinations.

Facilities available to the staff of the new paper laboratory enable services of three general types to be offered to the paper industry: pulp testing as related to use of neoprene, preparation of experimental papers, and testing of experimental papers. In any of these three fields, requests for technical assistance are welcomed.

As to pulp testing, the laboratory is equipped to perform such tests as determination of fiber areas, electron microscope studies, measurement of ion exchange capacity and determination of copper and permanganate numbers.

For the preparation of experimental papers, the laboratory is equipped with the following: four beaters of ¾, 1½, 3½ and 5 pound capacity, freeness tester, specially designed 36-inch drum dryer, 12x12 inch sheet forming equipment, 18-inch press section, 8x8 inch Noble & Wood sheet forming machine with variable white water return system. Also available are coating machines, calenders, offset and letterpress printing equipment and a 40-ton platen press for embossing and laminating studies.

For the third type of service, the testing of experimental papers, the staff has at its disposal—in addition to the standard equipment for porosity, smoothness, fold, etc.—the following specialized research tools: Instron and Tinius-Olsen tensile testers for precise measurement of energy absorption and stress-strain relationships; a unique puncture tester; special resilience and internal bond testers; Scott variable temperture wet-tensile tester in which the paper specimen is pulled under water; dry-tensile testers arranged to hold and pull specimens at temperatures up to 250 deg. F.; cold boxes for testing impact strength and adhesive strength of laminates at temperatures down to minus 90 deg. F. Fadeometers and Weatherometers are available for discoloration tests. An air conditioned room is available for testing paper under standard conditions.

An important feature of the laboratory design is the provision of flexibility. Equipment has been so installed, as to permit its arrangement in a variety of combinations simulating paper mill and paper converting operations. All in all, the company is confident it has the facilities to make neoprene an important new factor in the paper industry.

The properties imparted by the use of neoprene were announced at the opening of the new laboratory.

Tensile strength: Small amounts of neoprene produce improvement in wet strength and a little improvement in dry strength. For instance, tests were run on a 60-pound unbleached kraft with these results:

	No Neoprene Added	*2% Neoprene Added*
Dry tensile, lb./in. width	50	55
Wet tensile, lb./in. width (Immersed 24 hr. in water)	3	19

The 2 per cent neoprene, while it adds only 10 per cent to the dry tensile, adds 530 per cent to the wet tensile.

Elongation: Addition of neoprene increases elongation in both the machine and cross-machine direction. For example, in a 60-pound kraft bag paper, addition of 2.5 per cent neoprene resulted in a 30-33 per cent increase, and 17 per cent neoprene resulted in elongation increases of 165 per cent in the machine direction and 270 per cent in the cross-machine direction.

Bursting strength: Addition of neoprene produces a marked increase in both dry and wet bursting strength.

For example, tests run on the same 60-pound kraft used in the tensile tests (above) gave these results:

	No Neoprene Added	*2% Neoprene Added*
Dry bursting strength, pts. ..	59	72
Wet bursting strength, pts. (Immersed 24 hr. in water)..	6	45

The addition of 2 per cent neoprene improved the dry burst by 22 per cent and the wet burst by 650 percent.

Impact resistance: Increase in elongation obtained by adding neoprene to paper is more significant than that obtained by varying the pulp or method of processing. Neoprene is elastic, and it imparts a degree of elasticity to paper which cannot be obtained by using special pulp or by using non-elastic additives. Careful stress-strain measurements show that a given stress produces higher strain if the paper contains 2 or 3 per cent neoprene. This means greater energy absorbing capacity which, in bag paper for example, would result in material reduction in drop breakage.

Chemical resistance: Tests have shown that neoprene treated paper retains its strength to a greater extent than does untreated paper or conventional wet strength paper. In one test, 2-pound weights were suspended from 1-inch strips of kraft paper and hung so that the weights and part of the test strips were immersed in a test solution. Three kinds of paper were tested—commercial untreated 60-pound kraft, a commercial wet strength kraft containing resin additive, and the same weight kraft containing 3 per cent neoprene. Each paper was tested in three solutions — plain water, 10 per cent hydrochloric acid and 10 per cent caustic soda. In water: the untreated paper broke as soon as it was immersed; the resin treated paper broke after 72 hours; the neoprene-treated paper was still holding when the test was discontinued after 86 hours. In 10 per cent hydrochloric acid: the untreated paper broke immediately; the resin treated paper broke after 6 minutes; the neoprene treated paper broke after 4 hours. In 10 per cent caustic soda: the untreated paper broke immediately; the resin treated paper broke after 6 hours; the neoprene treated paper broke after 72 hours.

Other properties: Folding endurance, internal bond strength and scuff resistance are all improved markedly by addition of small amounts of neoprene. Smoothness, gloss and tear resistance of papers containing neoprene are about the same as similar types of regular paper.

Applications for Neoprene Treated Paper

There are a great many paper products in which the properties imparted by neoprene will be advantageous. Listed below are a few applications that have been tried, along with the particular properties that are useful in each case.

Multiwall bag: A 70/30 mixture of Southern and Swedish kraft containing 5 per cent neoprene has been tested against normal bag paper of the same weight (60-pound). The neoprene treated paper showed excellent chemical resistance and was found superior also in the following physical properties:

	No Neoprene Added	*5% Neoprene Added*
Energy absorption	9.18	12.95
Impact resistance		
Machine direction	8.97	10.13
Cross-machine direction	9.64	17.77
Puncture resistance, point #1	512	711
Scuff, p/p	1250	5650
	No Neoprene Added	*5% Neoprene Added*
Softness		
Machine direction	143.0	126.0
Cross-machine direction	56.2	50
Drop test	10	30

Experimental shipments have been made in which standard 4-ply multiwall bags were successfully replaced by a 3-ply construction in which this neoprene treated paper was used as the outside ply.

Printing paper: Bleached kraft printing papers containing 2 and 5 per cent neoprene have been made experimentally. They have excellent fold resistance, good resilience and are very strong. Their high wet strength makes them useful for map paper and waterproof labels.

Filter paper: Porous, unbleached 100-pound kraft containing 5 per cent neoprene is being made on a semi-commercial scale for use in industrial filter presses as a replacement for canvas filter cloth. Properties important in this use are wet strength and chemical resistance. The paper costs about 1/14 as much as the canvas it replaces.

Tray liners: Unbleached kraft containing 2 per cent neoprene is being used experimentally as a cheap, disposable liner for metal trays used for drying colors and chemicals. The use of such liners keeps sticky materials from adhering to the trays and eliminates cleaning expense. The important properties contributed by neoprene are high internal bond strength, wet strength and chemical resistance.

Imitation leather: Addition of 25 per cent neoprene to a mixed kraft-rope stock has been found to produce an excellent paper for imitation leather. It has excellent internal bond strength, abrasion resistance, wet strength and water repellency. Embossability is also very good; impressions are sharp and there is no decrease in over-all thickness. This paper would also be suitable for insoling and gasketing.

Masking paper base: Bleached kraft containing 50 per cent neoprene has been used in this application to replace standard saturated sheets containing 100-150 per cent GR-S synthetic rubber. It has high internal bond strength, good pliability and is much lower in cost.

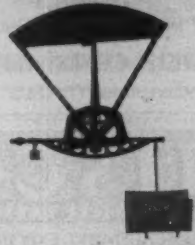
Sandpaper base: Semi-bleached kraft containing 15 per cent neoprene has been used experimentally to replace 100 per cent rope stock. Neoprene contributes high wet strength and excellent wet or dry abrasion resistance, and its improvement of internal bond strength permits lighter beaten stocks to be used.

Linoleum backing: Standard asphalt-saturated linoleum felt has been replaced by a low cost paper stock containing 7.5 per cent neoprene. The neoprene treated backing is pliable and doesn't get stiff when cold, as asphalt-saturated backing does. Linoleum or plastic wall tile on which the new backing is used is consequently much less troublesome to install and less subject to cracking. Neoprene also imparts high tensile strength, wet strength and internal bond strength. With the neoprene treated backing there is no danger of smudging walls during installation.

Meat labels: Bleached kraft containing 5 per cent neoprene is being used as marking tags by meat packers in place of regular varnish-coated tag stock. Neoprene gives the required blood and grease resistance.

Creped covers: Unbleached creped kraft containing 5 per cent neoprene

THWING-ALBERT WALL TYPE BASIS WEIGHT SCALE



Indicates ream weight of paper from a single sheet. Scale ranges from 25 grams to 200 pounds. Features anti-friction bearings and truss beam construction. Dead beat motion allows minimum oscillating. Also available as a differential scale. Ideal for moisture content determinations.

THWING-ALBERT INSTRUMENT COMPANY

5344 Pulaski Avenue
Philadelphia 44, USA

is being used to make temporary barrel covers. Neoprene imparts water repellency, tear resistance, wet strength and chemical resistance.

Laminates: Neoprene is being used as a kraft laminating material to produce a paper laminate with high fold resistance, excellent impact properties and good wet strength. It is suitable as furniture wrap, tarpaulins and baling paper.

AMERICAN CYANAMID CO. Industrial Chemicals Division has appointed Dr. A. J. Weith as product supervisor in the Synthetic Organic Chemicals Department.

WORTHINGTON PUMP AND MACHINERY CORP., Harrison, N. J., has opened a branch office in Harrisburg, Pa., at 506 Hall Building, Second and Locust Streets. The new office will be in charge of A. L. Mays and will be a branch of Worthington's Philadelphia office.

ASTEN

"When better dryer felts are made . . ."

ASTEN-HILL MFG. CO., Philadelphia, Pa.
ASTEN-HILL LTD., Valleyfield, Quebec

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Semi-Chem. and Chemical Pulp Processes
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MISCO
STAINLESS STEEL CASTINGS
FOR ALL EQUIPMENT EXPOSED TO CORROSION BY SULPHITE ACIDS OR OTHER CORROSIVE AGENTS
MICHIGAN STEEL CASTING CO.
DETROIT 7, MICHIGAN

MILL COGS
We make a specialty of "Ready Dressed" cogs which are READY TO RUN the moment driven and keyed. Write for circular "C" and instruction sheets free.
The N. P. BOWSHER Co., South Bend, Ind.

S. F. Thune

Dr. R. W. Merritt

NATIONAL STARCH PRODUCTS INC. has named Dr. R. W. Merritt and S. F. Thune assistant vice-presidents.

S. F. Thune had been made general manager of the company's Mid Western Division earlier this year, with headquarters in Chicago. "Woody" Thune previously directed sales at the Pacific Coast and New England divisions of the company.

Dr. Merritt has coordinated the operations of the Manufacturing Department since 1946. He has been connected with the company since 1937 in various manufacturing capacities.

ELECTRIC PRODUCTS CO., Cleveland, Ohio, recently established a separate Chicago office devoted exclusively to the sale and servicing of battery charging equipment and traction motors for industrial trucks. This new office will provide the Chicago area with factory trained specialists whose whole time and efforts will be concentrated on these products.

REPUBLIC FLOW METERS CO., Chicago 47, Ill., has appointed Fred McMeans & Co. as Republic's exclusive engineering and sales representative in the Province of British Columbia. The company is also opening a new Seattle district office at 1002 Second Ave., Room 907, Seattle 4, Wash. The Seattle district includes the states of Washington and Oregon and the Panhandle of Idaho and Alaska. Henry Weber is district manager.

ALEXANDER FLECK LTD., Ottawa, Canada, for some years past have been manufacturing and selling the Brammer Consistency Regulator under a license agreement from Paper and Industrial Appliances, Inc., New York City. This arrangement has worked out so satisfactorily that the agreement has now been extended to include other Paper and Industrial Appliances equipment. The additional equipment will include:

The Chemi-Pulper which is used for continuously producing various grades of pulp using either hard woods or soft woods to meet specific requirements. The Chemi-Pulper is largely used in connection with kraft or neutral sulphite cooking processes, either chemical or in the semi-chemical field.

The Morley Continuous Pulper for continuous production of pulp from cereal straws, bagasse and other cellulosic materials, particularly for use in connection with .009 corrugating material, tube stock and other grades requiring rigid characteristics.

LONGVIEW LIME CORP. is completing a new plant to manufacture masonry cement at Longview, Ala. The formula was perfected by the Southern Research Institute of Birmingham. It will be a composition of lime, portland cement, water cooled and granulated slag, in addition to other additives. It needs only to be added to water and sand and applied.

GENERAL ELECTRIC CO.'s Specialty Transformer and Ballast Department at Fort Wayne, Ind., has appointed Edmund C. Schorr manager of sales. He will assume his new responsibilities September 1.

C. L. Harvey

ELLIOTT CO., Ridgeway, Pa., announces that Cecil Harvey, formerly assistant to sales manager of Gibson Electric Co., has recently joined the headquarters sales staff of its large motor division.

In his new affiliation, Mr. Harvey will head application engineering work on large synchronous motors and all vertical motors. He will also serve as Elliott's electric motor consultant to the pulp and paper industry.

Ross Mekeel

CAMERON MACHINE CO., Brooklyn, N.Y., has elected Ross Mekeel a director.

Mr. Mekeel has been purchasing agent for over twenty-five years. He was named secretary of the company in June 1948 and will continue in that capacity. He previously was connected with the Fulton Foundry and Machine Co., Brooklyn.

AMERICAN CYANAMID CO. has named Richard F. Warren senior market research analyst of the Market Research Section of the New Product Development Department. For the past five years, Mr. Warren was Market Editor for McGraw-Hill's Chemical Engineering Magazine.

HEYDEN CHEMICAL CORP. has signed a lease for the entire sixteenth floor in the Canadian Pacific Building, 342 Madison Avenue, New York, N.Y., for occupancy in early 1952. Heyden plans to use the new space for the executive offices now located at 393 Seventh Avenue, for the sales offices of the American Plastics Corp., the Heyden Medical Department now located at 225 West 34 Street, and the Heyden Market Development technical sales and advertising departments.

DRY SPELL CLOSES FORESTS

At the moment of writing, British Columbia has completed 51 days without rain, and the sawmill industry of the province, particularly in Vancouver, New Westminster, and the Lower Mainland, is facing an acute situation. Over 100 of the smaller sawmills in the area have already closed down, but operations in the larger mills are curtailed.

Fifteen thousand loggers have been out of work for over a month because of the continued forest closure of the vast Vancouver forest district due to fire hazards. If the dry spell continues thousands of other loggers will be out of employment. L. L. G. Bentley, vice-president of Canadian Forest Products Ltd., one of the larger logging operations in British Columbia, states his mills are now working on log stock that should be set aside for next year.

Officials of the H. R. MacMillan Co. report that 53 of their smaller mills, mainly in the Fraser Valley area, which supplied the firm, have closed down. The Alaska Pine and Cellulose Co. Ltd. plant at New Westminster has been reduced to a three-day a week schedule. Other large mills are expected to follow this example.

Officials of the B. C. Lumber Manufacturers' Assn. state this has been one of the worst dry seasons on record, and that logging camps have lost up to two months' cutting time. In addition it is pointed out that construction work in the logging operations goes ahead during the summer for operations during the following year, and this type of work has been held up for nearly three months as a result of fire hazards.

Some of the larger mills are reported to be living on borrowed time, and the situation for the entire industry is extremely serious.

AMERICAN PAPER AND PULP ASSOCIATION'S PAPER PRODUCTION RATIO REPORT

(Production as per cent of normal capacity)

COMPARATIVE WEEKLY SUMMARIES

	July 14	July 21	July 28	Aug. 4	Aug. 11
1951	94.6	99.2	99.5	100.3r	101.0
	July 15	July 22	July 29	Aug. 5	Aug. 12
1950	92.9	96.6	99.9	99.4	98.5

COMPARATIVE MONTHLY SUMMARIES

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	92.6	93.6	96.7	95.4	96.4	97.7	85.3	99.6	96.1	101.0	99.6	91.2	95.8
1951	99.3	101.3	101.9	102.8	102.3‡	100.2‡	89.1‡						

‡ Preliminary.
r Revised.
* Weekly capacity base increased by 70 tons.

COMPARATIVE YEARLY SUMMARIES

	1944	1945	1946	1947	1948	1949	1950	1951
Year to Date	87.7	87.7	99.8	103.7	97.5	85.4	94.7	99.9
Year Average	88.1	89.4	101.1	104.3	96.2	88.6	95.8	

PAPERBOARD OPERATING RATIOS†

	July 14	July 21	July 28	Aug. 4	Aug. 11
1951	83	94	97	94	94
	July 15	July 22	July 29	Aug. 5	Aug. 12
1950	82	95	96	98	99

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Year Avg.
1950	88	92	91	92	91	94	82	100	96	103	101	93	94
1951	102	105	104	105	104	103	84						

All of the above data is based on tonnage reported to American Paper and Pulp Association. Does not include mills reporting to National Paperboard Association, except in isolated cases where both paper and paperboard are produced and separate tonnage figures are not readily available. Does not include mills producing newsprint exclusively.

† Per cents of operation based on "inch-hours" reported to the National Paperboard Association.

CHAS. T. MAIN, INC.
CONSULTING ENGINEERS
Process Studies, Design, Specifications and Engineering Supervision
PULP AND PAPER MILLS
Steam, Hydraulic and Electrical Engineering
Reports, Consultation and Valuations
80 Federal Street Boston 10, Mass.

WEYERHAEUSER

BLEACHED SULPHITE BLEACHED SULPHATE

THE RUST ENGINEERING COMPANY
Engineers and Constructors
Pittsburgh, Pennsylvania
Complete Service for
PULP AND PAPER MILLS—PLANTS AND FACILITIES
DESIGN, CONSTRUCTION, MODERNIZATION

Appleton FELTS
DEPENDABILITY
APPLETON WOOLEN MILLS APPLETON, WIS.

CLEARING HOUSE

HELP WANTED

MEN WANTED—POSITIONS OPEN

We can place—pulp and paper mill supt. (West); production manager, Cylinder board mill, salary $10,000-$12,000; mechanical and plant engineers, also asst. plant engineers; designers and draftsmen.

Chemical engineer for research work; master mechanics; salesmen for folding boxes and for paper mill equipment; tour bosses, Yankee, Cylinder and Fourdrinier machines; machine tenders and back tenders; beater engineers.

LIST YOUR CONFIDENTIAL APPLICATION WITH US to keep informed of attractive positions open in the pulp and paper mills.

CHARLES P. RAYMOND SERVICE, Inc.
294 Washington St., Boston 8, Mass.
SPECIALISTS IN PLACING PULP AND PAPER MILL EXECUTIVES

A-34

PAPER CONVERTING

We want the services of a man who knows how to supervise production and control quality of printed, coated, laminated and embossed papers. Experience with fluid and oil inks, coatings and adhesives is necessary. A working knowledge of chemicals and converting machinery will be helpful. There is an excellent salary and bright future for the right man in this job. If you are interested write, giving your complete work history and all other necessary details. All replies will be kept confidential. Our organization knows of this advertisement. Address Box 51-440 care Paper Trade Journal. S-7

MACHINE TENDER WANTED

for Mill in Central America. Excellent opportunity for right man. Apply Box 92, Hudson Falls, New York.

A-34

CHIEF DRAFTSMAN

Old established paper machinery manufacturer located in the middle west desires a chief draftsman. Man with engineering degree preferred but not necessary. Experience essential and must be experienced with paper mill machinery. Must be able to lead men and obtain good production at a reasonable cost. Permanent. Give complete information in your letter. Write Box 51-441 care Paper Trade Journal. S-14

WANTED—Young Chemical Engineer with some experience in pulp and paper manufacture for important research in pulping. Position may lead to new large industrial development. Give full details education, experience, personal data. Salary commensurate with experience. Address Box 51-414 care Paper Trade Journal. A-24

MASTER MECHANIC for one machine mill located in east. Address Box 51-443 care Paper Trade Journal. A-24

HELP WANTED

MILL MANAGER

PAPER BOARD: The opportunity of a life time for live-wire executive, qualified to take complete charge of our single machine mill in the Mid-West, producing 40 tons paper board daily.

Our fast growing organization needs a top-notch manager, who knows paper making thoroughly, who has a record of proven ability and who can translate his knowledge and experience into a smooth-running, efficient mill operation.

He must be a real administrator capable of commanding the respect of, and handling, labor and key personnel. He must be able to assume immediate over-all responsibility for the production of quality board.

The right man will receive excellent compensation and an extraordinary chance for self-development and secure future.

Write us in confidence, giving full details as to your past experience and personal qualifications in first letter. Reply to box 51-425 c/o Paper Trade Journal.

A-34

TOUR BOSS WANTED

Must be mechanically inclined for cylinder paper machine. Write giving full particulars of background and salary expected. Box 51-431 c/o Paper Trade Journal. S-7

MACHINE TENDER WANTED

for cylinder machine. Must be experienced. Excellent working conditions. Apply Box 51-432 c/o Paper Trade Journal. S-7

IN SOME MILL there is an experienced Fourdrinier Machine Tender looking for promotion. Have opening for an Assistant Superintendent, working with two others (tour) in a two machine M.G. Specialty mill located in Lake States. Replies will be held in confidence; give complete details about self in first letter. Reply Box 51-394 Paper Trade Journal. A-24

WANTED — Machine Tenders and Back Tenders for corrugating medium and liner mill, Fourdinier and cylinder machines. Located in Western Pennsylvania; good working conditions; pleasant surroundings and very good labor relations. Call collect—Tarentum 1470, TARENTUM PRODUCTS CORPORATION, Tarentum, Pa. TF

TOUR BOSS for Fine Paper Mill; also Machine Tenders for mill located in Eastern part of New York State. Address Box 51-428 care Paper Trade Journal. A-31

HELP WANTED

ASSISTANT MILL MANAGER

Opening available for the position of Assistant Mill Manager in large Eastern Canadian Newsprint Mill. Applicants must have proven executive and operating ability and be capable of assuming charge of all mill operations. Excellent opportunity for advancement to higher executive position with sound progressive company. Housing in Company townsite.

Age requirements 28 to 35 years.

Applicants please give complete details of experience and personal history. All replies confidential.

Box No. 51-401 care Paper Trade Journal. A-31

WANTED SPARE MACHINE TENDER

Board Mill in New England has an opening for an energetic "Cylinder Board Machine Tender" who will act as Spare and also do other important work.

We consider this a good opportunity for the right man.

If you are available, write Box 51-408 Paper Trade Journal giving experience, references and age.

A-34

SALARIED POSITIONS $3,500 to $15,000. We offer the original personal employment service (established 41 years). Procedure of highest ethical standards is individualized to your personal requirements. Identity covered; present position protected. Ask for particulars. R. W. BIXBY, INC. —117 Dun Bldg., Buffalo, 2, N. Y. TF

We have openings for:
1. Assistant Engineer on a large paper mill expansion in the south. Must know pulp and paper mills.
2. Structural, mechanical and process and electrical engineers, designers and draftsmen for power plant and paper mill work, location southern Michigan.

Excellent salaries. Write immediately to Box 51-438 care Paper Trade Journal giving educational and experience record and personal data. A-24

WANTED—Master Mechanic or Assistant for modern 3-Machine Tissue Mill. Progressive management; expansion program now under way. Fine opportunity for young/middle aged man to advance. Substantial paper mill mechanical experience with electrical background desirable. Give complete resume of experience in letter to Box 51-442 care Paper Trade Journal. Replies held strictly confidential. TF

TOUR BOSS with experience in Cylinder Machines producing various boards. Rotating shifts, steady employment. Mill in Massachusetts. In reply give full details including salary required. Address Box 51-410 care Paper Trade Journal. A-24

RATES FOR CLEARING HOUSE ADVERTISING

HELP WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

SITUATIONS WANTED—10c a word, double rate for heavy face type. Minimum charge $3.50. If repeated ½ rate will be charged for each consecutive repetition.

FOR SALE—10c a word. Double rate for heavy face type. Minimum charge $3.50.

WANTED—10c a word. Double rate for heavy face type. Minimum charge $3.50.

OPPORTUNITIES—10c a word. Double rate for heavy face type. Minimum charge $3.50.

Classified advertising space may also be purchased at $5.00 per single column inch. All classified advertisements are payable in advance.

If box number is used—70 cents additional.

Address replies to advertisements appearing under Box Numbers in care of PAPER TRADE JOURNAL, 15 West 47th Street, New York 18, N. Y.

HELP WANTED

WORKING PAPER MILL MECHANIC

Must have previous experience on cylinder machine. Good opportunity for right man. Apply Box 51-430 c/o Paper Trade Journal. 8-7

WORKING SUPERINTENDENT for small fast growing Eastern mill making lightweight specialties. Cylinder machine experience essential. State qualifications and salary expected. Address Box 51-87 care Paper Trade Journal. TF

SITUATIONS WANTED

EXECUTIVE ACCOUNTANT COMPTROLLER

Capable, cost minded administrative executive, age 46, available immediately. Fully experienced in multi-plant paperboard, folding carton and printing industry. Box 51-197, Paper Trade Journal. 8-7

SITUATIONS WANTED

WASHINGTON REPRESENTATIVE

and Staff Executive. Successful record of accomplishment in Washington, and in Sales and Administrative functions. Pulp, Paper, Specialties. Energetic and versatile. Now employed. Seeking permanent connection. Address Box 51-413 care Paper Trade Journal. A-34

SUPERINTENDENT THIRTY YEARS OF PRACTICAL EXPERIENCE MANUFACTURING HIGHEST GRADES light and heavy weight papers on modern high speed Cylinder and Fourdrinier machines folding box board, kraft, book and bond specialties from sulphite and sulphate, groundwood, de-inked papers. Can get quality and production. Best of references. Address Box 51-415 care of Paper Trade Journal. 8-7

PLANT MANAGER—Paper and Board and their conversion; wants challenging opportunity. Highly successful in organization; administration; labor relations and high level production. Presently employed. Address Box 51-43 care Paper Trade Journal. A-31

FOR SALE

FOR SALE

1—84" 9-roll Supercalender Stack. Complete with drives.

J. J. ROSS COMPANY

250 Frelinghuysen Ave., Newark, N. J.
Tel BIgelow 3-3720 A-24

FOR SALE

Toilet Winders

2—72" Hudson-Sharp (Surface type winder)
1—84" Giesinger

J. J. ROSS COMPANY

250 Frelinghuysen Ave., Newark 5, N. J.
Tel BIgelow 3-3720 A-24

FOR SALE—Approx. 11M pounds white creped kraft (Iceberg). Rolls 18" wide, 19" diameter, 30# basis, 12-19% crepe. Price 17¾c per pound FOB Garwood, New Jersey. General Cellulose Co., Inc. A-24

FOR SALE—1 74" Trim Moore & White 2-drum Winder with slitting equipment, less motor. 2 Stock Pumps Moore & White Duplex —15 tons per 24 hours. Rochester Paper Company, Rochester, Michigan. A-24

FOR SALE

1—Sandusky Couch Roll—126" drilled face x 22" diameter.
1—123" 3 bowl revolving reel.

BEARINGS
72—Top and bottom Dryer Bearings 7" diameter x 12" long.

BEATERS
1—Dilts Iron Tub Laboratory Beater.
Beater roll 14" diameter x 10½" face.
1—Noble & Wood Cast Iron Beater—1000# capacity—roll newly refilled.

CALENDER STACKS
1—9 roll 68" Calender Stack.
1—3 roll pressure calender—32" x 100".
1—72" 4 roll calender stack. (Extra heavy duty).
1—84" Smoothing Calender Stack, 2 Iron Rolls, 2 Cotton Rolls.

CHEST
1—Cast Iron Stock Chest, 25' long x 6' high. (With agitator).

CHIPPER
1—96" Murray 4 knife Chipper—anti-friction bearings.

CRUSHER & HAMMERMILL
1—Murray Chip Crusher.
1—Jeffrey Hammermill.

CYLINDER MOLDS
2—30" diameter x 72" face.
1—68" diameter x 78" face.
5—36" diameter x 54" face.
1—36" diameter x 96" face.
1—48" diameter x 72" face.
4—56" diameter x 78" face.
1—30" diameter x 92" face.
1—36" diameter x 72" face.

DRIVES
1—#8½ Reeves Drive.
1—#4 Reeves Drive
1—Reliance Electric Drive, complete with 5 gear head motors.
1—#3 Reeves Drive (totally enclosed).

DRYERS
1—Complete unit, consisting of 6 dryers, 36" diameter x 36" face, including frames, gears, anti-friction bearings.
7—24" diameter x 48" face.
1—36" diameter x 96½" face.
1—36" diameter x 142" face.
1—24" diameter x 130" face.
1—48" diameter x 70" face.
2—Dryers 48" diameter x 134" face.
1—24" diameter x 92½" face.
2—32" diameter x 48" face.
1—84" diameter x 48" face.
1—60" diameter x 60" face.
1—36" diameter x 60" face.
1—30" diameter x 61" face, complete with frames.
8—24" diameter x 60" face.

GUILLOTINE CUTTER
1—40" Cutter.

FLAT SCREENS
1—A plate Sturvis Flat Screen
2—Packer, 12 plate, roller shoe type.

JORDANS
1—Herne Jordan.
1—Noble & Wood Mammoth.

LIME SLUDGE FILTERS
1—IMPCO Lime Sludge Filters, vacuum type, 5' diameter x 4' face.

MOTORS
Write us regarding your requirements.

PRESSES
2—Beta Primary Presses, complete, 145" face, Anti-friction bearings. Also all types of rolls for 145" wet end.

PULLEYS
Various cone and assorted pulleys.

PULPERS
1—Jones Pulper. Complete with motor and drive.
1—Noble & Wood Pulper—Iron Tub.
1—Lannoye Pulper.

PUMPS
Various sizes of Centrifugal and Plunger Pumps. Write us regarding your particular requirements.
4—Shartle Brothers circulating pumps, each 4,000 g.p.m.

REEL
1—123"—3 bowl Revolving Reel.

REFINERS
2—#1 Claflin Refiners.

ROLLS
Felt, Table, Press, Breast, Couch, etc. Various sizes and types. (Bronze, Rubber, Iron, etc.)

ROTARY SCREENS
1—#2 Bird Rotary Screen.
1—#1A Bird Rotary Screen.

SAVEALLS
1—#5 Bird Saveall.
2—Savealls, 36" diameter x 136" face cylinder molds, iron and vats.

SHREDDERS
2—Daniels Rag Cutters.

SLITTERS & WINDERS
1—119" 2 drum Waldron
2—112" Cameron—Type 18.
1—104" Beloit two drum winder.
1—42" Cameron Constant Tension with pneumatic control.
1—42" Cameron—Type 6.
1—62" Cameron—Type 8-S.
1—62" Cameron—Type 26-3A.
1—42" Johnstone Slitter.
1—62" Moore & White 4 drum winder.
1—62" Cameron—Type 10-10.
1—62" Cameron—Type 10.
1—54" Cameron—Type 10-6.

STOCK PUMPS
1—10 x 20 Shartle Duplex.
1—7 x 16 Shartle Duplex.
Advise us to your requirements.

SUCTION COUCH ROLL
1—Sandusky Couch Roll 128" drilled face x 22" diameter.

SUCTION BOXES
2—136" face Suction Boxes.

THICKENER
1—IMPCO Thickener—Cylinder mold 36 x 78.

VACUUM PUMPS
1—N-82 Nash, for Fulton-Midwest System.

WET MACHINE
1—77" Rogers Wet Machine.

YANKEE DRYERS
1—48" Face x 84" Diameter, Frames & Bearings.
1—68" face x 60" diameter including frames and anti-friction bearings.
1—64" face x 60" diameter, including frames and bearings, also 2 dryers 30" diameter x 64" face.

We are always in the market to purchase your surplus or idle machinery. What have you to offer?
Wanted Cylinder and Fourdrinier Machines (complete mills).

Paddy Ross, Pres. **J. J. ROSS COMPANY** Ben Kars, Treas.

250 Frelinghuysen Ave. Tel.—Bigelow 3-3720 Newark 5, N. J.

FOR SALE

DRYER SECTION — 23 — Dryers 28" dia. x 63¾. Eight dryers are 61¾" face, complete with frames, gears, bearings, felt rolls, steam joints, steam traps.

BAG MACHINES — Potdevin self-opening square Bag machines. Models 81, 82, 83 and 84.

STEAM TURBINE — 135 HP, variable speed, 125 lb. steam pressure, 10 lb. back pressure.

PAPER MILL STORES

P.O. BOX 40, LOCKPORT, N. Y. TEL.—MIDDLEPORT 6-5941

A-24

PAPER MILL EQUIPMENT

76" Cameron type 8 model 10 Slitter.
78" Moore & White Rewinding Reel.
52" Cameron type 8 model 5 Slitter.
48" Kidder type CH Rotary Slitter.
36" Hobbs shear cut Slitter.
42" Moore & White Sheeter with Layboy.
40" Finley Sheeter with Hamblet single pile Layboy.
58" Finley Sheeter.
100" Dillon Sheeter with 10-roll Back-Stand.
36" Acme Automatic Power Paper Cutter.
#13 Industrial Paper Shredder.
NEW Hamblet Sheeters, any specification.
NEW Balers, both hand and power.

THOMAS W. HALL COMPANY, Inc.
120 West 42nd St., New York 18
(Plant at Stamford, Conn.)

TF

For Sale. Shopping bag handle machine for making prefabricated bag handles. Machine manufactured by the Paper Converting Machine Company, Green Bay. Has been used only short time. Is adjustable so that either 9" or 7" handles can be made. Has gluing device which places glue on each side of the bag handle for delivery onto receiving chain, ready for bag insertion. Has double head stitcher. Capacity of the machine 2,000 handles per hour. Machine is in first-class condition, priced low. Also Smith and Winchester machine for manufacturing satchel bottom shopping and other style bags. Address Box 51-429 care Paper Trade Journal. A-31

FOR SALE

Langston 84" type "B" Shear Cut Slitter and Rewinder, 10" Diameter, fine condition, immediate delivery. THEO. ADAMS, 111 W. Washington St., Chicago 2, Ill. S-7

PAPER COATING MACHINERY MANUFACTURERS — Waxing, Oiling, Carbon Laboratory Coating and Treating and Flat Ream Measuring and Converting Machines. New improvement. THE MAYER MACHINE COMPANY, INC., 1313 Buffalo Road, Rochester, 11, N. Y. TF

FOR SALE—One 200 H.P. G.E. Motor—Type I. Form K. Frame 17, Ser. 4025617, 3/60/440/600 rpm with Std. shaft extension, 2 extra drippings for Moisture Proofing. Never used since rebuilt. Sangamon Paper Mills, Inc., 137 W. Pershing Rd., Chicago, Illinois. A-31

NEWSPRINT FOR SALE—Counter rolls and sheets. Large quantities. Send replies to Box 51-437 care Paper Trade Journal. A-24

FOR SALE—Two Machine Tissue Mill. One straight Cylinder, one Yankee Machine, located New York State. Good water power. Address Box 51-436 care Paper Trade Journal. A-31

FOR SALE—1—122" Heavy Duty Single Knife Horne Cutter, suitable for Board or Pulp. Address Box 51-275 care Paper Trade Journal. TF

WANTED

WANTED TO BUY

Small, one or two machine mill for manufacture of board. Box No. 51-398, c/o Paper Trade Journal. A-24

Wanted: One — 120" or larger Cylinder or Fourdrinier Machine in good condition, complete. Box 51-411 care Paper Trade Journal. A-24

WANTED
GOOD USED INTERFOLD PAPER TOWEL MACHINE
of any standard make. Address Box No. 51-435 care Paper Trade Journal. A-24

BOUGHT — SOLD
Soda Ash—Caustic Soda
Titaniums—Lithopone—Zinc Oxides
Glycols—Cellosolves—Ethanolamines
Bichromates—Dyes—Colors, etc.
CHEMICAL SERVICE CORPORATION
50-54 Beaver St., New York 5, N. Y.
A-24

WANTED—W & P Shredders, Evaporators, Generators and Boilers, Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers Address Box 51-80 care Paper Trade Journal. TF

INTER-FOLD towelling machines wanted. Give full details as to make, age and location, etc. to Box 51-426 care Paper Trade Journal. A-24

WANTED—One Laboratory Pulp Classifier in good working condition. State price and full details. GOULD PAPER COMPANY, Lyons Falls, N. Y. A-24

WANTED—Brightwood Box Machine, Shredders, Evaporators, Generators and Boilers Slitters, Cutters, Hydraulic presses, Sheridan Presses, Dryers. Address Box 51-81 care Paper Trade Journal. TF

WANTED—Paper Towel Interfold Machine. Address Box 51-439 care Paper Trade Journal. S-7

WANTED—Paper Mills in East with Fourdrinier Machine, 66" trim up to 120". Principals only. Address Box 51-434 care Paper Trade Journal. A-31

BUSINESS OPPORTUNITY

WE OFFER FACILITIES of a 60" machine for jumbo roll work; Coating, Varnishing, Impregnating, Web Printing; on exclusive subcontract or time-material, cost plus basis. Write Long Island Finishing Corp., 5-39 48th Avenue, Long Island City, 1, N. Y. A-24

GOVERNMENT BIDS

PROPOSALS

FOR FURNISHING

PAPER FOR THE U. S. GOVERNMENT PRINTING OFFICE

SEALED PROPOSALS will be received until 10 a.m., September 10, 1951, in the room of the Joint Committee on Printing, in the Capitol, Washington, D. C., for furnishing the paper for the public printing and binding, and blank paper for the use of the Government departments and establishments in the District of Columbia, for the term of three months, beginning October 1, 1951; deliveries to be f.o.b. Government Printing Office Warehouse, or ware house siding, Washington, D. C. The proposals will be opened in the presence of and the award of contracts made by the Joint Committee on Printing to the lowest and best bidders for the interest of the Government whose bids are in conformity with the requirements of the proposal. The Committee reserves the right to reject any or all bids, or to accept any bid or any part and reject the other part, if, in its opinion, such action would be in the interest of the Government.

Blank proposals containing the instructions, schedules, and specifications may be obtained by addressing John J. Deviny, Public Printer, Washington 25, D. C.

Contracts will be entered into for supplying the quantities required, whether more or less than the estimates, as provided in paragraph 15 of the instructions.

The approximate estimated quantities set forth in detail in the schedule comprise:

PAPER

3,200,000 pounds newsprint paper; 2,680,000 pounds machine-finish book paper; 40,000 pounds machine-finish book-end paper; 130,000 pounds english-finish book paper; 2,888,000 pounds offset book paper; 295,000 pounds antique book paper; 200,000 pounds water resistant (text) book paper; 760,000 pounds supercalendered book paper; 2,025,000 pounds coated book paper; 1,380,000 pounds mimeograph paper; 470,000 pounds duplicator copy paper; 10,392,000 pounds writing paper; 160,000 pounds map paper; 570,000 pounds manifold paper; 2,854,000 pounds bond paper; 605,000 pounds ledger paper; 1,130,000 pounds index paper; 265,000 pounds cover paper; 155,000 pounds manila paper; 225,000 pounds kraft paper; 610,000 sheets gummed paper; 55,000 pounds blotting paper; 200,000 pounds tag board; 30,000 pounds manila cardboard; 20,000 sheets railroad board; 410,000 pounds wood cardboard; 100,000 pounds tan board; 7,600,000 pounds postal card paper; 5,000 sheets pressboard; 150,000 pounds newsboard; 110,000 pounds binder's board; 320,000 pounds chestnut cover board.

By direction of the Joint Committee on Printing.

JOHN J. DEVINY,
Public Printer.

WASHINGTON, D. C.
August 20, 1951. A-31

WHERE TO BUY

ABRASIVES
Monsanto Chemical Co.
Naugatuck Chemical Division of U. S. Rubber Co.
Norton Co.
Simonds Abrasive Co.

ADHESIVES
American Cyanamid Company Plastics & Resins Division
Diamond Alkali Co.
E. I. du Pont De Nemours & Co., Inc.
The Goodyear Tire & Rubber Company
Monsanto Chemical Co.
Morningstar, Nichol, Inc.
National Starch Products, Inc.
Neoco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Stein, Hall & Co., Inc.

ADJUSTABLE SHAKE MOTION
Manchester Machine Co.
Rice Barton Corporation

ADJUSTABLE TILTING MOTOR BASE
Lovejoy Flexible Coupling Co.

AGITATORS
American Paper Machy. & Engrg Works, Inc.
Appleton Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
D. J. Murray Mfg. Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.
Shartle Brothers Machine Co.

ALLOYS
Michigan Steel Casting Co.

ANTIFOAM
American Cyanamid Company Industrial Chemicals Division
National Aluminate Corp.
Neoco Chemical Co.

APRON CLOTH
Williams-Gray Co.

BAG MACHINES
Dilts Machine Works
Potdevin Machine Co
H. G. Weber & Co., Inc.

BALL MILLS
F. L. Smidth & Co.

BARK BURNER
Combustion Engineering-Superheater, Inc.
Hoft Company, Inc.
Nichols Engrg. & Research Corp.

BARK PRESS
Fibre Making Processes, Inc.

BARKERS AND CHIPPERS
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
Carthage Machine Co.
Fibre Making Processes, Inc.
D. J. Murray Mfg. Co.
Valley Iron Works Co.

BARS
Dilts Machine Works
E. D. Jones & Sons Co.
The Moore & White Co.
Shartle Brothers Machine Co.
Valley Iron Works Co.

BASIC WEIGHT SCALES
Tinius-Olsen Testing Machine Co.

BEARINGS
The Bagley & Sewall Company
Black Clawson Company
E. D. Jones & Sons Co.
Magnus Metal Corp.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
SKF Industries
Stephens-Adamson Mfg. Co.
Timken Roller Bearing Co.
Valley Iron Works Co.

BEATERS AND JORDANS
American Paper Machy. & Engrg Works, Inc.
The Appleton Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Mardon Machines Co.
J. J. Ross Company
Ross Paper Machy. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

BED PLATES
Baur Brothers Mfg. Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lukenweld Div., Lukens Steel Co.
Rice Barton Corporation
Shartle Brothers Machine Co.
Valley Iron Works Co.

BELTING
Alexander Bros. Belting Co.
Allis-Chalmers Mfg. Co.
Goodrich, B. F., Co.
The Goodyear Tire & Rubber Company
Link Belt Company

BIN DISCHARGERS
Hoft Company, Inc.
Stephens-Adamson Mfg. Co.

BLEACHING AGENTS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Rohm & Haas Co.
Virginia Smelting Co.

BLEACHING APPARATUS
E. D. Jones & Sons Co.
Perkins & Sons, Inc., B. F.
Moore & White Co.
Niagara Alkali Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

BLOW PIPES & PITS
Carthage Machine Co.
Kalamazoo Tank & Silo Co.
Moore & White Co.
Murray Mfg. Co., D. J.
Walworth Company

BOILERS
Babcock & Wilcox Co.
Combustion Engineering-Superheater, Inc.

BOTTOMS
Kalamazoo Tank & Silo Co.
Valley Iron Works Co.

BOXBOARD SCALES
Tinius-Olsen Testing Machine Co.

BRUSH ROLLS
M. W. Jenkins Sons, Inc.
Geo Riedel & Son

BRUSHES
M. W. Jenkins Sons, Inc.
Geo Riedel & Son
The Sandy Hill Iron & Brass Works
Smith Winchester Mfg. Co.

BURSTING TESTERS
B. F. Perkins & Son Inc.
Testing Machines, Inc.

CALENDERS
The Bagley & Sewall Company
Beloit Iron Works
Black Clawson Company
Downingtown Mfg. Co.
Farrel-Birmingham Co., Inc.
Lobdell United Co.
Edward J. McNair
The Moore & White Co.
Perkins & Sons, Inc., B. F.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

CARRIER ROPE
Williams-Gray Co.

CASEIN
American Cyanamid Co. Industrial Chem. Div.
Bunge Pulp & Paper Co.
Reevelox Powder Co.

CASTINGS
Appleton Machine Co.
The Bagley & Sewall Company
Black Clawson Company
Babcock & Wilcox Co.
Carthage Machine Co.
Dilts Machine Works
Downingtown Mfg. Co.
Farrel-Birmingham Co.
Hamilton Machine Co.
Lobdell United Co.
Magnus Metal Corp.
Michigan Steel Casting Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Walworth Company

CENTRIFUGAL MACHINERY
Bird Machine Co.
Nichols Engrg. & Research Corp.
Ross, J. O., Engrg. Co.
Shartle Brothers Machine Co.

CHAINS
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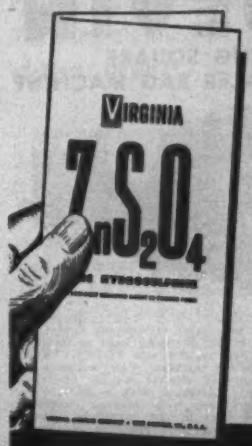

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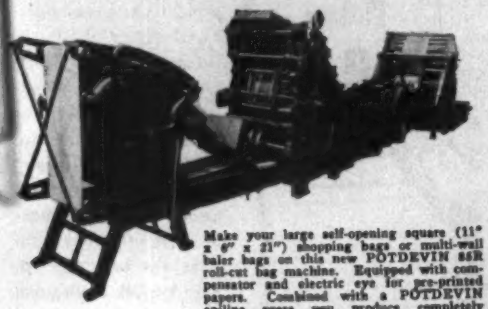

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E. I. du Pont de Nemours & Co., Inc.
General Dyestuffs Corp.
Getzy Co., Inc.
B. F. Goodrich Chemical Co.
Gottesman & Co.
Hercules Powder Co.
Hooker Electrochemical Co.
The Kinsley Chemical Company
Monsanto Chemical Company
National Aluminate Corp.
Naugatuck Chemical Division of U. S. Rubber Co.
Niagara Alkali Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co., Columbia Chemical Division
Reichhold Chemicals, Inc.
Rohm & Haas Co.
Virginia Smelting Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

CHESTS
The Bagley & Sewall Company
E. D. Jones & Sons Co.
Kalamazoo Tank & Silo Co.
Shartle Bros. Mch. Co.

CHIP PACKERS
Fibre Making Processes, Inc.

CLEANING MATERIALS
American Cyanamid Company Industrial Chemicals Division
Diamond Alkali Co.
The Dow Chemical Company
E. I. du Pont de Nemours & Co., Inc.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Pittsburgh Plate Glass Co.
Wyandotte Chemicals Corp., J. B. Ford Division

CLUTCHES
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The Bagley & Sewall Company
Black Clawson Company
Farrel-Birmingham Co.
Hudson-Sharp Mch. Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.

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Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co., Inc.
Moore & White Co.
Potdevin Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corporation, John Weber, Herman G., & Co., Inc.

COATING MATERIALS
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B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Hercules Powder Co.
J. M. Huber Corp.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.
Pittsburgh Plate Glass Co. Columbia Chemical Division
Reichhold Chemicals, Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

COGS
The N. P. Bowsher Co.

COMPLETE FOURDRINIER ROLL GRINDING
Manchester Machine Co.

COMPRESSORS
Allis-Chalmers Mfg. Co.
Nash Engineering Co.
Roots-Connersville Blower Corp.

CONDENSATE FILTERS
Hungerford & Terry, Inc.
The Permutit Company

CONDENSERS
Fibre Making Processes, Inc.

CONSISTENCY REGULATORS
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Bird Machine Company
DeZurik Shower Company
Paper & Industrial Appliances

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Dilts Machine Works
Ebasco Services
Frank W. Egan & Co.
Alvin H. Johnson & Co., Inc.
Main, Inc., Chas. T.
The Rust Engrg. Co.
Shartle Bros. Mch. Co.
J. E. Sirrine & Co.
Frank C. Vaughan
John Waldron Corp.
H. G. Weber & Co., Inc.

CONTINUOUS DIGESTER
Paper & Industrial Appliances

CONTROLLERS
Black Clawson Company
The Brown Instrument Co.

CONTROLS
The Brown Instrument Co.
Johnson Corp.
Foirier Control Co.
Shartle Bros. Mch. Co.
Stickle Steam Specialties Co.

CONVERTING MACHINERY
The Bagley & Sewall Company
Egan, Frank W., & Co.
John Waldron Corp.
Dilts Machine Works

CONVEYORS
Black Clawson Company
Jeffrey Mfg. Co.
Murray, D. J., Mfg. Co.
Ross Engineering Corp., J. O.
Shartle Brothers Mch. Co.
Stephens-Adamson Mfg. Co.

CORES
Elixman Paper Co.
Smith & Winchester Mfg. Co.
Sonoco Products Co.

CORROSION RESISTANT
Amercoat Corporation

COTTON LINTER
Alpha Cellulose Corp.
Railway Supply & Mfg. Co.

COTTON PULP
Alpha Cellulose Corp.

COUCH ROLLS
Beloit Iron Works

COUPLINGS
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Black Clawson Company
Farrel-Birmingham Co., Inc.
E. D. Jones & Sons Co.
Lovejoy Flexible Coupling Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works
Waldron Corp., John

CRANES
Cleveland Crane & Engrg. Co
Whiting Corp.

CURL TESTER
Thwing-Albert Instrument Co.

CUTTERS
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Beloit Iron Works
Black Clawson Company
Dilts Machine Works
Gibbs-Brower Company, Inc
Graphic Arts International Corp.
Thomas W. Hall Co.
Harris-Seybold Co.
Jagenberg-Werke Akt. Ges.
Moore & White Co.
Perkins & Son, Inc., B. F.
Rice Barton Corporation
The Sandy Hill Iron & Brass
Taylor, Stiles & Co. Works
The Smith & Winchester Mfg Co.

CYLINDER MOULDS
Manchester Machine Co
Rice Barton Corporation

CYLINDERS
M. W. Jenkins Sons, Inc.

DAMPENERS
Perkins & Son, Inc., B. F
Valley Iron Works Co.

DECKLE WEBBING
Williams-Gray Co.

DEFIBRATORS
American Defibrator Co.

DE-INKING
Dilts Machine Works
General Dyestuff Corp.
Kinsley Chemical Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DEINKING CHEMICALS
E. I. Du Pont De Nemours & Co., Inc.
General Dyestuff Corp.
Kinsley Chemical Co.
Nopco Chemical Co.

DE-MINERALIZING EQUIPMENT
Hungerford & Terry, Inc.
The Permutit Company

DEMULSIFIERS
Wyandotte Chemicals Corp., Michigan Alkali Div.

DENSOMETERS
Bunge Pulp & Paper Co.
W. & L. E. Gurley

DESIGN CONSTRUCTION
Ebasco Services

DETERGENTS
American Cyanamid Company Industrial Chemicals Division
Calgon, Inc.
Diamond Alkali Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DEWAXING CHEMICALS
American Cyanamid Company Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

DIFFERENTIAL SCALES
Thwing-Albert Instrument Co.

DIGESTER CIRCULATING SYSTEMS
Fibre Making Processes, Inc.

DIGESTERS
Babcock & Wilcox Co.
Blaw Knox Company
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.
Lukenweld
Paper & Industrial Appliances
Pusey & Jones Corp.

DISPERSING AGENTS
Calgon, Inc.
Diamond Alkali Co.
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

DOCTORS
The Bagley & Sewall Company
Bird Machine Company
Black Clawson Company
Downingtown Mfg. Co.
Lobdell United Co.
Lodding Engineering Corp.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

DOCTOR BLADES
The Bagley & Sewall Company
Bird Machine Company
Lodding Engrg. Corp.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Simonds Saw & Steel Co.

DRIERS
The Bagley & Sewall Company
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Lukenweld
The Moore & White Co.
Murray Mfg. Co., D. J.
J. J. Ross Company
Red-Ray Mfg. Co., Inc.
Rice Barton Corporation
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

DRILLED SUCTION COUCH ROLLS
Manchester Machine Co.

DRILLED SUCTION DRUM ROLLS
Manchester Machine Co.

DRIVES
Allis-Chalmers Mfg. Co.
Appleton Machine Co.
The Bagley & Sewall Company
Beloit Iron Works
Bird Machine Co.
Black Clawson Company
Dilts Machine Works
Downingtown Mfg. Co.
Fairbanks, Morse & Co.
Farrel-Birmingham Co.
Jeffrey Mfg. Co.
General Electric Company
Gibbs-Brower Company, Inc.
Moore & White Co.
Murray, D. J., Mfg. Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.
Westinghouse Electric Corp.

DRUM WINDERS
Manchester Machine Co.
Rice Barton Corporation

DRYER DRAINAGE
Stickle Steam Specialties Co.

DRYER ROLL PYROMETER
Thwing-Albert Instrument Co.

DUSTERS
Appleton Machine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
M. W. Jenkins Sons, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
John Waldron Corp.

DUSTING BRUSHES
M. W. Jenkins Sons, Inc.

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Bunge Pulp & Paper Co.
Ciba Company
E. I. du Pont de Nemours & Co., Inc.
Geigy Co., The
General Dyestuffs Corp.
National Aniline Division, Allied Chemical & Dye Corp.

ELECTRIC HYGROMETER
Thwing-Albert Instrument Co.

EMBOSSING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
John Waldron Corp.

EMBOSSING ROLLS
The Appleton Machine Co.
Gibbs-Brower Company, Inc.
Holyoke Machine Co.
Northern Engraving & Mch. Co.
S. F. Perkins & Son, Inc.
John Waldron Corp.
Wheeler Roll Co.

EMULSIFIERS
General Dyestuff Corp.
Nopco Chemical Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp.

ENZYMES
Rohm & Haas Co.
Vanderbilt Co., R. T.

EVAPORATORS
Davis Engrg. Corp.
Goslin-Birmingham Mfg. Co. Inc.
Murray, D. J., Mfg. Co.
Swenson Evaporator Co., Div. of Whiting Corp.

EXPANDERS
Mount Hope Machinery Co.

FANS
General Electric Co.
S. F. Perkins & Son, Inc.
Ross Engineering Co., J. O.

FEEDERS
Hoeft Company, Inc.
Jeffrey Mfg. Co.
Merrick Scale Mfg. Co.
The Permutit Company
Stephens-Adamson Mfg. Co.

FELTS
Appleton Woolen Mills
Asten-Hill Mfg. Co.
Draper Bros. Corp.
Huyck & Son, F. C.
Lockport Felt Co.
Morey Paper Mill Supply Co.
Shuler & Benningfield
Waterbury Felt Co.
Waterbury, H., & Sons Co.
Williams-Gray Co.

FELT CLEANERS
Calgon, Inc.
General Dyestuff Corp.
Nopco Chemical Co.

FELT CONDITIONERS
Bird Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

FELT GUIDES
Black Clawson Company
Frank W. Egan & Co.
Gilbert & Nash Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

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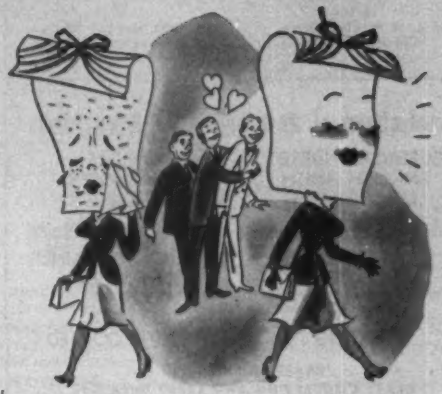

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Wyandotte Chemicals Corp., Michigan Alkali Div.

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Hungerford & Terry, Inc.
Johnson Corp.
Moore & White Co.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Walworth Company

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Crane Company
Shartle Bros. Mch. Co.
Walworth Company

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Lovejoy Flexible Coupling Co.
John Waldron Corp.

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Norton Co.

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Rice Barton Corporation
The Sandy Hill Iron & Brass Works

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Elwell Parker Elec. Co.
Towmotor Corp.

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Williams Apparatus Co., Inc.

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Black Clawson Company
Downingtown Mfg. Co.
The Moore & White Co.
Noble & Wood Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

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Williams Apparatus Co.

FURNACES
Holl Company, Inc.

GASKETS
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GEARS
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Black Clawson Company
De Laval Steam Turbine Co.
Downingtown Mfg. Co.
Frank W. Egan & Co.
Farrel-Birmingham Co.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Struh Process Steel Co.
Valley Iron Works Co.
Westinghouse Electric Corp.
Western Gear Works

GRAPPLES
Blaw-Knox Company

GRAVITY FILTERS
Holyoke Machine Co.

GRINDERS
Carthage Machine Co.
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Lobdell United Co.
Norton Company
Samuel C. Rogers and Company
The Sandy Hill Iron & Brass Works

GRINDING WHEELS
Norton Company
Simonds Abrasive Co.

GUIDES
The Bagley & Sewall Company
Egan, Frank W., & Co.
Gilbert & Nash Co.
The Moore & White Co.
Mount Hope Machinery Co.
Rice Barton Corporation
John Waldron Corp.

GUMMING MACHINES
Dilts Machine Works
Egan, Frank W., & Co.
The Sandy Hill Iron & Brass Works

GUMS
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Stein-Hall Co., Inc.

HEAT EXCHANGERS AND RECOVERY SYSTEMS
Fibre Making Processes, Inc.
Stickle Steam Specialties Co.
Westinghouse Electric Corp.

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E. D. Jones & Sons Co.
General Electric Co.
D. J. Murray Mfg. Co.
Red-Ray Mfg. Co., Inc.
Ross Engineering Corp., J. O.
Stickle Steam Specialties Co.
Valley Iron Works Co.

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Nopco Chemical Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

IMPREGNANTS
American Cyanamid Company Industrial Chemicals Division
B. F. Goodrich Chemical Co.

INDENTING MACHINES
Dilts Machine Works

INDUSTRIAL TRACTORS
Clark Equipment Company Industrial Truck Division
Tourmotor Corp.

INKOMETER
Thwing-Albert Instrument Co.

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Bunge Pulp & Paper Co.
Cambridge Instrument Co.
General Electric Company
W. & L. E. Gurley
B. F. Perkins & Son
Photovolt Corp.
Taylor Instrument Cos.
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co.

JOINTS
The Bagley & Sewall Company
Beloit Iron Works
Johnson Corp.
Lovejoy Flexible Coupling Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.
Appleton Machine Co.
Baby Brothers Mfg. Co.
E. D. Jones & Sons Co.
Shartle Bros. Mch. Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

KNIVES
Black Clawson Company
Dilts Machine Works, Inc.
Hamblet Machine Co.
Heppenstall Company
E. D. Jones & Sons Co.
The Moore & White Co.
Simonds Saw & Steel Co.
Taylor Stiles & Co.
Valley Iron Works Co.

KNOTTERS
Fibre Making Processes, Inc.

KRAFT WRAPPING PAPERS
Canadian Newsprint Supply Co.

LABORATORY CORRUGATOR
Thwing-Albert Instrument Co.

LABORATORY EQUIPMENT
Appleton Machine Co.
Bauer Brothers Co.
Bird Machine Company
Dilts Machine Works
W. & L. E. Gurley
Egan, Frank W., & Co.
E. D. Jones & Sons Co.
Taylor Instrument Companies
Testing Machines, Inc.
Valley Iron Works Co.
John Waldron Corp.
Williams Apparatus Co., Inc.

LAMINATING MACHINES
The Bagley & Sewall Company
Dilts Machine Works
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

LAY BOYS
Dilts Machine Works
Gibbs-Brower Company, Inc.
Hamblet Machine Co.
Moore & White Co.

LIFT TRUCKS
Clark Equipment Company Industrial Truck Division

LINTER COTTON
Alpha Cellulose Corp.
Railway Supply & Mfg. Co.

LINTER PULP
Alpha Cellulose Corp.

LUBRICANTS
Gulf Refining Co.
Sinclair Refining Co.

Sonny-Vacuum Oil Co.
Sun Oil Company
The Texas Company
Tide Water Associated Oil Co.

MAGAZINE REELS
Dilts Machine Works (Kohler Systems)

MATERIALS HANDLING
Clark Equipment Company
Industrial Truck Division
Cleveland Crane & Engrg. Co.
Dilts Machine Works
Jeffrey Mfg. Co.
Shartle Bros. Mch. Co.
Stephens-Adamson Mfg. Co.
The Wellman Engrg. Co.

METAL TIRES
Stroh Process Steel Co.

MICROMETERS & CALIPERS
Farrel-Birmingham Co.
Lobdell Co.
Stephens-Adamson Mfg. Co.
Testing Machines, Inc.

MICRO-CRYSTALLINE WAXES
Barco Oil Co.
Bunge Pulp & Paper Co.
Moore & Munger
Sun Oil Company

MOISTURE CONTENT CONTROL
Cambridge Instrument Co.
Stickle Steam Specialties Co.
Williams Apparatus Co., Inc.

MOTORS AND GENERATORS
Allis-Chalmers Mfg. Co.
Fairbanks, Morse & Co.
General Electric Company
Reliance Electric & Engrg. Co.

NEWSPRINT
Bunge Pulp & Paper Co.
Canadian Newsprint Supply Co.

NICKEL AND NICKEL ALLOYS
The International Nickel Co.

NOZZLES
Spray Engrg. Co.

PACKING BOXES
Clark Equipment Company
Industrial Truck Division
Johnson Corporation
The Moore & White Co.
Shartle Brothers Machine Co.

PALLET TRUCKS
Clark Equipment Company
Industrial Truck Division

PAPER MACHINE DRIVES
The Bagley & Sewall Company
Manchester Machine Co.
Rice Barton Corporation

PAPER MACHINES
The Bagley & Sewall Company
Beloit Iron Works
Bagley & Sewall Co.
Black Clawson Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Lakenweld
Moore & White Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

PAPER MACHINE SLICES
Black Clawson Company
E. D. Jones & Sons Co.
The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Valley Iron Works Co.

PAPER TUBE MACHINERY
Dietz Machine Works
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson Sharp Machine Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.

PARAFFINE WAXES
Moore & Munger
Sun Oil Company

PARAFFIN WAX EMULSIONS
Nopco Chemical Co.

PASTING MACHINES
Beloit Iron Works
Black Clawson Company
Dilts Machine Wks.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Murray, D. J., Mfg. Co.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

PEBBLE MILLS
F. L. Smidth & Co.

PERFORATED METAL
Allis-Chalmers Mfg. Co.

pH METERS
Cambridge Instrument Co.
Tuwing-Albert Instrument Co.

PIPE
Armco Drainage & Metal Products, Inc.
Babcock & Wilcox Co.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
National Tube Co.
Walworth Company

PIPE FITTINGS
Armco Drainage & Metal Products, Inc.
Crane Company
Grinnell Company
Michigan Steel Casting Co.
Walworth Co.

PITCH CONTROL
American Cyanamid Company
Industrial Chemicals Division
General Dyestuff Corp.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Rohm & Haas Co.

PLASTICIZERS
American Cyanamid Company
Industrial Chemicals Division
Aktivin Division, Heyden Chemical Corp.
B. F. Goodrich Chemical Co.
Naugatuck Chemical
Division of U. S. Rubber Co.
Nopco Chemical Co.

PLATERS
Gibbs-Brower Company, Inc.
Perkins & Son, Inc., B. F.

PLATES
Armco Steel Corp.
Babcock & Wilcox Co.
J. O. Ross Engrg. Corp.
Lukenweld Division
Lukens Steel Company
Timken Roller Bearing Co.

PLUGS
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Black Clawson Company
E. D. Jones & Sons Co.
Shartle Brothers Machine Co.

POPE TYPE REELS
Egan, Frank W., & Co.
Manchester Machine Co.
Rice Barton Corporation

PRECISION SAMPLE CUTTER
Testing Machines, Inc.
Tuwing-Albert Instrument Co.

PRESERVATIVES
E. I. du Pont de Nemours & Co
General Dyestuff Corp.

PRESS ROLLS
Beloit Iron Works
Rice Barton Corporation

PRESSURE FILTERS
Holyoke Machine Co.

PRESSURE VESSELS
Chicago Bridge & Iron Co.
Combustion Engineering-Superheater, Inc.

PRESSES
Black Clawson Company
Dietz Machine Works
Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mch. Co.
The Moore & White Co.
Potdevin Machine Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.
Waldron Corp., John
H. G. Weber & Co., Inc.
Williams Apparatus Co.

PULLEYS
Lovejoy Flexible Coupling Co.
Rice Barton Corporation

PULP CLASSIFIER
The Bauer Bros. Co.
Tuwing-Albert Instrument Co.

PULP CLEANERS
Nichols Engrg. & Research Corp.

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Crane Company
Record Fdy. & Mach. Co.
Shartle Brothers Machine Co.

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Apmew, Inc.
Bauer Brothers Co.
Dilts Machine Works
E. D. Jones & Sons Co.
Morden Machines Co.
Shartle Brothers Machine Co.

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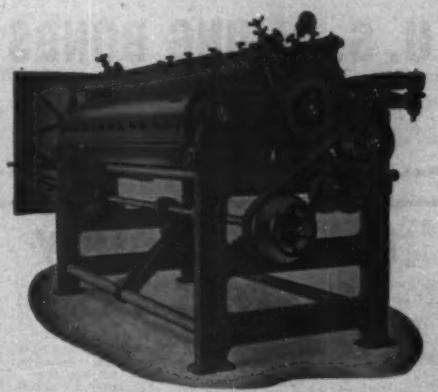

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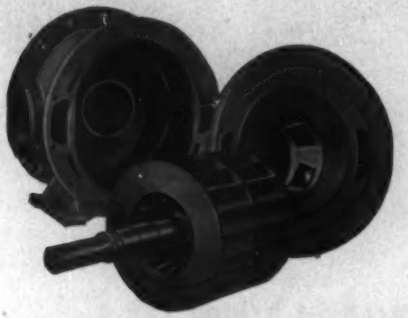

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Valley Iron Works Co.

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Hudson-Sharp Mch. Co.
Moore & White Co.
Rice Barton Corporation
Rodney Hunt Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
The Smith & Winchester Mfg Co.

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Bauer Brothers Co.
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Morden Machines Co.
Murray, D. J., Mfg. Co.
Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Sprout Waldron & Co., Inc.
Sutherland Refiner Corp.
Valley Iron Works

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Johnson Corp.
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Taylor Instrument Companies

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Hercules Powder Co.
Monsanto Chemical Company
Naugatuck Chemical Division of U. S. Rubber Co.
Mopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Reichhold Chemicals, Inc.
Rohm & Haas Co., Resinous Products Div.

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Black Clawson Company
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Farrel-Birmingham Co.
Gibbs-Brower Company, Inc.
Holyoke Machine Co.
Lobdell United Co.
Edward J. McBride Co., Inc.
The Moore & White Co.
D. J. Murray Mfg. Co.
Perkins, E. F., & Sons Co.
Pusey & Jones Corp.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
U. S. Rubber Co.
Valley Iron Works Co.
Waldron Corp., John
Wheeler Roll Co.

ROLL COVERS
The Goodyear Tire & Rubber Company

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Dilts Machine Works (Kohler Systems)
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Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
John Waldron Corp.
H. G. Weber & Co., Inc.

ROPE CARRIERS
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The Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works

ROTARY KILNS
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ROTARY STEAM JOINTS
Johnson Corp.
The Moore & White Co
Rice Barton Corporation
Shartle Bros. Mch. Co.

RUBBER PRODUCTS
The Goodyear Tire & Rubber Company

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B. F. Goodrich Chemical Co.

SATURATING MACHINES
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Potdevin Machine Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

SAVEALLS
Bird Machine Company
Chicago Bridge & Iron Co.

SAWS
Simonds Saw & Steel Co.

SCALES
Fairbanks, Morse & Co.
Merrick Scale Mfg. Co.
Testing Machines, Inc.

SCREEN PLATES
Bird Machine Company
Fitchburg Screen Plate Co.
Magnus Metal Corp.
Mercy Paper Mill Supply Co.
Testing Machines, Inc.

SCREENS
Allis-Chalmers Mfg. Co.
Appleton Wire Works
Appleton Machine Company
The Bagley & Sewall Company
Bird Machine Company
Carthage Machine Co.
Dilts Machine Works, Inc.
Downingtown Mfg. Co.
Fibre Making Processes, Inc.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stephens-Adamson Mfg. Co.
Valley Iron Works Co.

SHEET MACHINES
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Valley Iron Works Co.
Williams Apparatus Co., Inc.

SHEETERS
Jagenberg-Werke Akt. Ges.

SHOWER PIPES
Bird Machine Company
Downingtown Mfg. Co.
Moore & White Co.
Sandusky Fdy. & Mch. Co.
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.

SHREDDERS
Bauer Brothers Co.
Carthage Machine Co.
Gibbs-Brower Company, Inc.
Jeffrey Mfg. Co.

SIZE PRESSES
Manchester Machine Co.
Rice Barton Corporation

SIZING
American Cyanamid Company, Industrial Chemicals Division
The Dow Chemical Company
du Pont, E. I., de Nemours & Co.
Glidden Company
Hercules Powder Co.
The Hubinger Co.
Monsanto Chemical Company
National Aluminate Corp.
Nopco Chemical Co.
Stein-Hall Co., Inc.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SIZING TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

SLIME CONTROL
The Dow Chemical Company
E. I. du Pont de Nemours & Co.
General Dyestuff Corp.
Monsanto Chemical Co.
National Aluminate Corp.
Rohm & Haas Co.
Vanderbilt Co., R. T.
Wyandotte Chemicals Corp., Michigan Alkali Div.

SLITTERS
The Bagley & Sewall Company
Black Clawson Company
Cameron Machine Co.
Carthage Machine Co.
Clark-Aiken Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Graphic Arts International Corp.
Thomas W. Hall Co., Inc.
Hamblet Machine Co.
Hudson-Sharp Mch. Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
D. J. Murray Mfg. Co.
Pusdevin Machine Co.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Co.
The Sandy Hill Iron & Brass Works
Smith & Winchester Mfg. Co.
Valley Iron Works Co.
Waldron Corp., John

SMOKE STACKS
Chicago Bridge & Iron Co.

SOFTNESS-STIFFNESS TESTER
W. & L. E. Gurley
Testing Machines, Inc.
Thwing-Albert Instrument Co.

SOLUBLE OILS
American Cyanamid Company, Industrial Chemicals Division
General Dyestuff Corp.
Nopco Chemical Co.

SPECIAL MACHINERY
Dilts Machine Works
Egan, Frank W., & Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
John Waldron Corp.

SPLICING TISSUE
Bunge Pulp & Paper Co.
Williams-Gray Co.

STAINLESS STEEL
Armco Steel Corp.
Michigan Steel Casting Co.
U. S. Steel Corp.

STARCH
A. M. Meincke & Son, Inc.
Chosen Foods, Inc.
The Hubinger Co.
National Starch Products Inc.
Stein-Hall Co., Inc.

STEAM JOINTS
The Moore & White Co.
Rice Barton Corporation
Shartle Bros. Mch. Co.

STEAM SPECIALTIES
Babcock & Wilcox Co.
Combustion Engrg. Co., Inc.
Johnson Corp.
Stickle Steam Specialties Co.

STEEL
Armco Steel Corp.
Carnegie Illinois Steel Co.
Lukens Steel Company
D. J. Murray Mfg. Co.
The Sandy Hill Iron & Brass Works
U. S. Steel Corp.

STEEL, CLAD
Babcock & Wilcox Co.
Lukens Steel Company

STEEL TANKS
Chicago Bridge & Iron Co.
The Sandy Hill Iron & Brass Works

STRETCH TESTER
Thwing-Albert Instrument Co.

STUFF CHESTS
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Rice Barton Corporation
Shartle Brothers Machine Co.
Valley Iron Works Co.

SUCTION BOXES
Black Clawson Company
Downingtown Mfg. Co.
E. D. Jones & Sons Co.
Moore & White Co.
Rice Barton Corporation
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.

SUCTION ROLLS
Beloit Iron Works

SULPHITE SPECIALTIES
Canadian Newsprint Supply Co.

SULPHUR
Texas Gulf Sulphur Co.

SULPHUR BURNERS
Valley Iron Works Co.

SULPHUR DIOXIDE
American Cyanamid Company, Calco Chemical Div.
Anoul Chemical Co.
Virginia Smelting Co.

SUPERCALENDERS
The Appleton Machine Co.
B. F. Perkins & Son, Inc.

SYNTHETIC LATICES
American Cyanamid Company, Industrial Chemicals Division
B. F. Goodrich Chemical Co.
The Goodyear Tire & Rubber Company
Naugatuck Chemical Division of U. S. Rubber Co.
Nopco Chemical Co.

TAKE OFF UNITS
Dilts Machine Works (Kohler Systems)

TALC
American Cyanamid Company, Industrial Chemicals Division
Vanderbilt Co., R. T.

TANKS
Chicago Bridge & Iron Co.
Kalamazoo Tank & Silo Co.
B. F. Perkins & Sons, Inc.
J. O. Ross Engrg. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Waldron Corp., John

TEARING TESTERS
Thwing-Albert Instrument Co.
Testing Machines, Inc.

TENSILE TESTERS
Bunge Pulp & Paper Co.
Thwing-Albert Instrument Co.
B. F. Perkins & Son, Inc.
Testing Machines, Inc.
Nopco Chemical Co.

THICKENERS, DECKERS AND SAVEALLS
The Appleton Machine Co.
Bird Machine Company
Carthage Machine Co.
Chicago Bridge & Iron Co.
Dilts Machine Works
Downingtown Mfg. Co.
Moore & White Co.
D. J. Murray Mfg. Co.
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

TITANIUM
American Cyanamid Co., Calco Chemical Div.
E. I. du Pont de Nemours & Co.
Titanium Pigment Co.
R. T. Vanderbilt Co.

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Walworth Company

TRACTORS AND TRUCKS
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Elwell Parker Elec. Co.
Towmotor Corp.

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Dodge Mfg. Corp.
Jeffrey Mfg. Co.
Link Belt Company
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Stephens-Adamson Mfg. Co.

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Johnson Corporation
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Stickle Steam Specialties Co.

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F. L. Smidth & Co.

TUBES
Babcock & Wilcox Co.
National Tube Co.

TUBING MACHINES
Dilts Machine Works

TUBING, MECHANICAL
National Tube Co.

TUBS
Shartle Brothers Machine Co.
Valley Iron Works Co.

TURBINES
Allis-Chalmers Mfg. Co.
De Laval Steam Turbine Co.
General Electric Company

UNWINDERS
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
Rice Barton Corporation
John Waldron Corp.

USED EQUIPMENT
Gibbs-Brower Co.
Thomas W. Hall Co.
J. J. Ross Company
Ross Paper Machy. Corp.
Shartle Brothers Machine Co.

V-BELTS
Lovejoy Flexible Coupling Co.

VALVES
The Bagley & Sewall Company
Crane Company
Dilts Machine Works
E. D. Jones & Sons Co.
Magnus Metal Corp.
D. J. Murray Mfg. Co.
William Powell Co.
Record Fdy. & Mch. Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Stickle Steam Specialties Co.
Valley Iron Works Co.
Walworth Company

VATS
Beloit Iron Works
Rice Barton Corporation

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The Bagley & Sewall Company
Bird Machine Company
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
E. D. Jones & Sons Co.
Moore & White Co.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Valley Iron Works Co.

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Jeffrey Mfg. Co.

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General Dyestuff Corp.
Hungerford & Terry, Inc.
National Aluminate Corp.
The Permutit Company
The Sandy Hill Iron & Brass Works

WATER DISPERSIONS
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Naugatuck Chemical Division of U. S. Rubber Co.
Rohm & Haas Co., Resinous Products Div.

WATER FILTERS
Holyoke Machine Co.

WATER FINISH EQUIPMENT
Dilts Machine Works

WATER PENETRATION TESTER
Thwing-Albert Instrument Co.
Williams Apparatus Co., Inc.

WATER SOFTENERS
Hungerford & Terry, Inc.
The Permutit Company
Wyandotte Chemicals Corp., Michigan Alkali Div.

WATER VAPOR CUPS
Thwing-Albert Instrument Co.

WAXES
Bunge Pulp & Paper Co.

WAXING MACHINERY
Black Clawson Company
Dilts Machine Works
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
The Mayer Machine Co.
Pusdevin Machine Co.
Shartle Brothers Machine Co.
Waldron Corp., John
Weber, Herman G.

WEB TENSION CONTROL
Dilts Machine Works (Kohler Systems)
Egan, Frank W., & Co.
John Waldron Corp.

WELDING EQUIPMENT
General Electric Company
Walworth Company

WET MACHINES
The Bagley & Sewall Company
Black Clawson Company
Carthage Machine Co.
Downingtown Mfg. Co.
Gibbs-Brower Company, Inc.
Moore & White Co.
Pusey & Jones Company
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
The Sandy Hill Iron & Brass Works
Shartle Brothers Machine Co.
Smith & Winchester Mfg. Co.
Valley Iron Works Co.

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Reichhold Chemicals, Inc.

WETTING AGENTS
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Diamond Alkali Co.
General Dyestuff Corp.
Monsanto Chemical Company
Nopco Chemical Co.
Plaskon Division, Libbey-Owens-Ford Glass Co.
Rohm & Haas Co.
Wyandotte Chemicals Corp., Michigan Alkali Div.

WHITE WATER TREATING EQUIPT.
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The Permutit Company
The Sandy Hill Iron & Brass Works

WINDERS & REWINDERS
The Bagley & Sewall Company
Beloit Iron Works
The Appleton Machine Co.
Black Clawson Company
Kohler Systems
Cameron Machine Co.
Dietz Machine Works
Dilts Machine Works
Downingtown Mfg. Co.
Frank W. Egan & Co.
Gibbs-Brower Company, Inc.
Thomas W. Hall Co.
Hudson-Sharp Mch. Co.
Jagenberg-Werke Akt. Ges.
Langston Co., Samuel M.
Moore & White Co.
Pusdevin Machine Co.
Pusey & Jones Corp.
Rice Barton Corporation
J. J. Ross Company
Ross Paper Machy. Corp.
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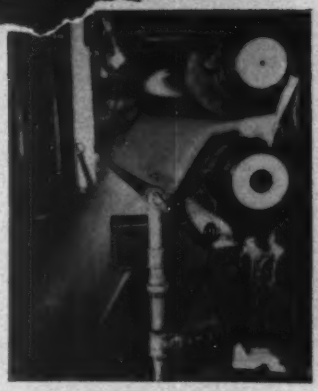

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